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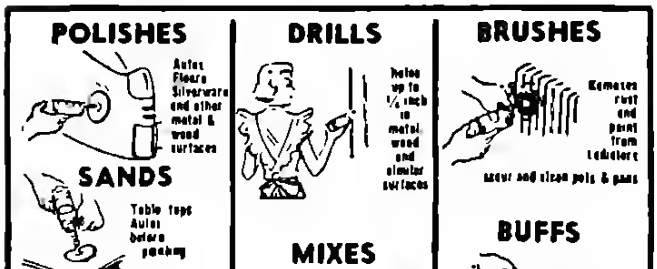

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ADVENTURES MAGAZINE

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AN EDITORIAL

INTRODUCTION

You've probably noticed that this is the first issue of a new science fiction magazine. You may have picked it up for that reason, since it seems quite a few people collect first issues. Or perhaps you liked the cover or the names on the contents page; maybe you were only killing time, and this was just a random selection. They're all good reasons.

In any event, we're happy you've found us, and we hope you'll like us well enough to keep on finding us in the future. We'll try to make it pleasant for you, with the help of the writers who join us in trying to give you the kind of reading you want.

Some of them are names you've seen on contents pages for years. Ross Rocklynne, L. Sprague de Camp and the editor have been working in science fiction for over fifteen years. Cyril Kornbluth was writing under a host of pen-names before World War II, and is now already well-established under his own name. Wilmar H. Shiras has built an enviable reputation with a few outstanding stories, and Chad Oliver was well known for his unusually interesting letters before he began writing a few years ago.

Other writers are comparatively new. Roger Dee has appeared for some time, but is just beginning to be recognized for the fine craftsman he is. Irving E. Cox, Jr., is just establishing himself. And Thomas C. Pace and F. M. Turner were new names to the editor when their submissions came in.

In the future, you'll find other writers who are new to you, as well as ones who are leaders in the field. It is our intention to bring you the most interesting stories we can find without any particular attention to the name on the manuscript. Probably the larger part of the stories will be by writers you already know—because those authors built their reputations by turning out consistently good stories and are wise enough to keep giving their best.

But our pages will always be open to a story by an unknown

writer, and we will never buy material for the sole purpose of getting a good "cover name." We're not trying to impress you; we simply want to entertain and interest you.

In fact, we believe that the only way we can continue to impress you favorably is to bring you the most entertaining fiction possible. Beyond attempting to do that, we have no definite policy. Nor have we ever found any formula which would assure us in advance that a story would be well liked by the readers. All we can do is to read the stories submitted carefully and try to choose only those which made us forget we were reading them because it was a job—the ones which made us forget everything but the story itself while reading it. We feel that there is no better test of a story than that!

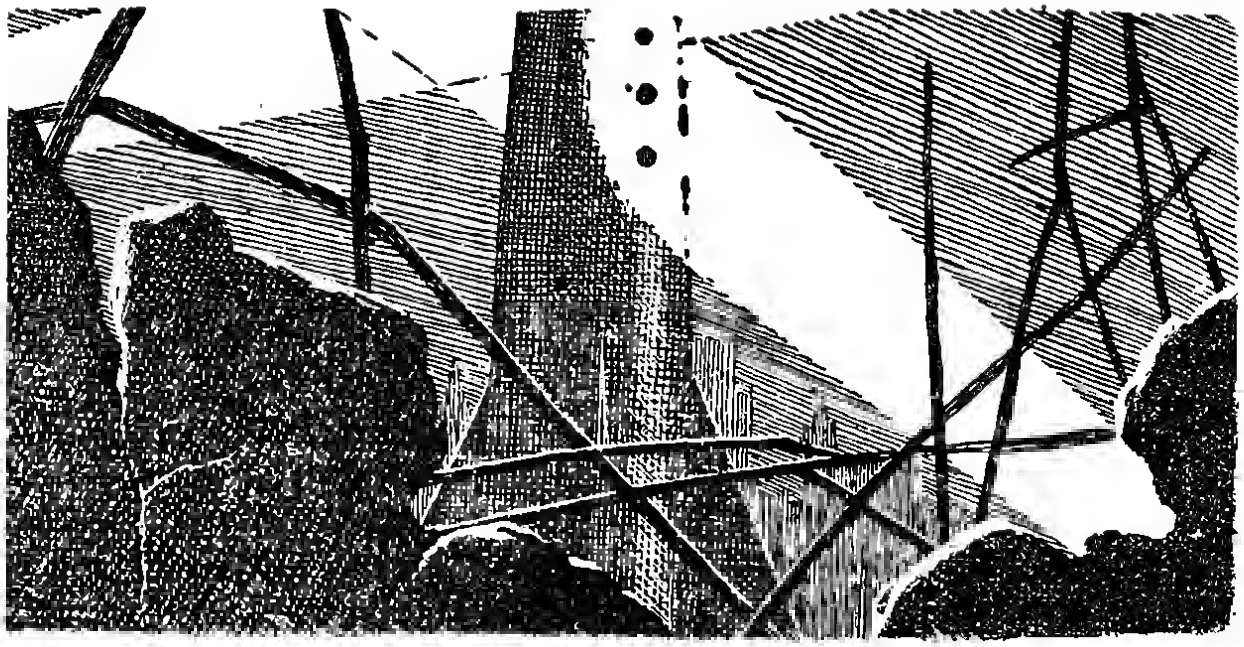
We also feel that science fiction isn't meant to be educational. It is primarily fiction, not a discourse on science. The science in the stories should be acceptible, of course—otherwise they might as well be labelled fairy tales. But the problems of the people in the stories must be stressed more than the gadgets they use. Fiction is concerned with the reactions of human, believable characters in unusual predicaments. The fact that the character is a robot or a man from Sirius, and the predicament is one which can only exist in the future or on another world, doesn't change that; it only gives a freshness or gives added punch to a story.

On the other hand, we don't feel that ten fights in a story makes it automatically exciting. Science fiction readers are a pretty adult crowd—whatever their age in years may be. They've already abandoned the contrived story so common in other fields of fiction. We believe they're much more interested with the reactions inside the character than the mere motions he goes through.

Hence, you won't find cowboys chasing Indians on Mars; nor will you find scientific lectures thinly disguised as stories by the addition of a mad scientist. We object to mad scientists and unbearably evil alien monsters on the simple ground that they're dull.

But that's enough introduction of ourselves. The stories inside this magazine can speak for our policy and our writers better than we can.

Now we'd like to have you introduce yourselves to us. We want to know what you think of this issue, and what you'd like to see in future issues. The better we know each other, the closer this can be to the ideal magazine most of us are searching for when we pick up a first issue. Drop us a note and tell us all about yourselves and what you want, won't you?



The Fires of Forever

BY CHAD OLIVER

ILLUSTRATED BY VAN DONGEN

Irth was slipping backwards to extinction, and only a few scientists were left to seek the help they needed from the stars. They had a Ship—and an ancient Skull. With those, they had to win!

The rain was a thin mist that shivered in the cold night air as Kyl Ransm hurried along the wet sidewalk toward the university. The collar of his gray raincoat was turned up in back and his face and hair were wet with rain. He looked nervously back over his shoulder again and again and he knew that he was walking too fast.

The city was dark around him and he could see, far to his left, the twin searchlights crossing and recrossing in the night sky. Beneath those lights, stark in his mind's eye, was the silent Ship—the humbled, paint-spattered Ship that had dared to be proud in her dream of the stars. Kyl Ransm shivered.

He left the sidewalk when he was two blocks from the university and picked his way carefully along the backs of the deserted dormitories. Broken windows gaped blankly at him as he passed and

the uncut, weed-choked grass was slippery under his feet. He kept going until he could make out the hedge surrounding the university ahead of him. Then he held his breath and stepped out from the comforting blackness of the buildings.

He almost made it safely across the open space before it happened. His leg brushed against a small bush in the darkness and there was a sharp rustling sound.

"What was that?" asked a startled voice.

Ransm threw himself flat on his face in the black shadow of the hedge. He tried not to breathe and he could feel his heart thudding in his chest. The mist had cleared somewhat but the grass under him was cold and wet. The pistol in his raincoat pocket dug painfully into his side.

He kept his head down, fighting an almost irresistable urge to look up, to *see*. He heard the heavy boots of the guards shuffling on the old sidewalk. If they spotted him this close to the university now—

"I thought I heard something," the voice said. It was a thick voice, a mechanical voice, a voice without feeling.

"Who'd come here?" a second voice muttered. "Nobody comes here no more."

"You can't never tell. I thought I heard something."

A tubelight beam played over the hedge. Ransm could see it out of the corner of his eye. It stabbed across the moist grass and probed into the bushes. It ran along the dark branches of the hedge, up and down. It came closer. Ransm lay very still. It touched his foot. Ransm didn't move. The light passed by and he breathed again in a ragged, stifled gasp.

"See? Nothing there — you're hearing things."

"You can't never tell," the first voice repeated. "I thought I heard something."

The light snapped off. Ransm waited five minutes by his watch and then cautiously raised his head. The mist was over now and the clouds had broken up into scattered streamers. An icy half moon hung frozen in the night sky and the university grounds were pale and colorless through the branches of the hedge. He inched his way along until he came to a slight break in the foliage, pressed the branches back, and slipped through.

He was in.

The old familiar buildings were all around him and the clean white spire of the Tower of Knowledge stood as straight and ageless as ever in the moonlight. But the campus around it was dead with the cold silence of years and the gray cement cross-walks were ghostly in the night.

It had been a long time.

He ran quickly to the shadow of the Physics Building and paused to make sure no one was coming. The weeds had grown up thickly around the stone walls — the

Physics Building had been among the first to go . . .

There wasn't a sound as he walked across the deserted campus. He kept to the shadows and his mind whispered across the years as he walked. Only fifteen years, it murmured softly. Fifteen years since students were crossing these walks in the sunlight with books under their arms and cutting classes to get a beer. They were laughing in the classrooms and having coffee with their friends. Jon Sharlnd was writing his books in the Tower and Dalkr and Edwrds were smuggling whiskey into the physics lab and arguing about the star ship. Rockets were flaming between the worlds and lovers were whispering on the lake. Only fifteen years ago—and now here he was, sneaking back, a criminal.

He climbed through a broken window in the Anthropology Building, smiling faintly at the prohibited signs on the walls. He hurried along a dark hallway, his footsteps clicking in the silence. He climbed the old stairs and went past his own office. His name was still on the door and someone had thrown paint on it and covered up the *Professor of Anthropology.* He went on, all the way to the top floor. He tried the door. It was unlocked and he pushed his way in. He went past the broken desks and the smashed cabinets and there it was.

The Museum.

A little pale light filtered in through the windows and etched a nightmare in cold silver and black. The glass cases were shattered and the exhibits destroyed. Tapestries and pictures had been ripped off the walls. A grinning Neandicrthal skull, thick and flat, leered up at him from a pile of junk on the floor. They had even torn out the water fountain on the wall, where the water had been sweet and cool on the hot summer afternoons.

Ransm picked his way through the debris and clenched his fists helplessly. He tried not to think abount the blind stupidity that strangled the Earth in its black grip of ignorance—but it wasn't easy, not with his life lying around him in broken piles on the floor. That was his trouble, he thought without bitterness. He had a mind and it didn't turn on and off like a light switch. He never thought of himself as being unusually idealistic, and he most certainly was not being consumed by any inner flame. It was just that he thought too much and he liked what he liked.

And here he was. He laughed at himself. Here he was and he supposed that he *had* to be here. Not that anyone had made him come, and not that it wouldn't have been smarter to stay away for good. Why take chances? And yet he really had no choice. He had to be here the same way that some men had to ride steel coffins through the great deeps of

space, or had to go hunting under the pines, or had to talk wonderful nonsense around a bottle in a bar. He was what he was, and it was too late to change now.

He pushed his way past some splintered packing crates in the corner and reached his hand into a pile of wood. It was still there. He pulled the box out and looked at it in the pale light. It was a small box, about a foot and a half square, and it was thoroughly nondescript. It was heavy.

This time, he knew, he was going to take it with him.

He went back through the Museum with the box under his arm and started down the stairs. Almost instantly, he stopped. He stood very still and listened. He heard a faint cough and the scraping sounds of footsteps.

Someone was coming up the stairs.

Ransm turned and walked silently back into the Museum. He forced himself to move slowly and carefully. It wouldn't do to break into a run and stumble against something in the semi-darkness. There was another stairway on the other side of the building. If he could get to that, he had a chance.

He crossed the Museum and went out through the far door into a small anteroom. He tried the door that led to the stairs and cold sweat beaded his forehead. The door was locked.

There was no time to break the door down and make a run for it. There would be a fast alarm and they'd get him sure. He slipped the gun out of his raincoat pocket, checked the silencer, and went soundlessly back into the Museum. He stationed himself behind a broken packing case where he had an angle on the door, cocked the revolver slowly, and squinted over its silencer in the moonlight.

The footsteps were close now and a tubelight beam shot up out of the well of the staircase. He waited. The light touched the broken desks and crumpled cabinets. Somebody whispered something in the silence—that meant that there were at least two of them. His hand was steady.

They came into the anteroom—two shadows that moved furtively behind the glare from the tubelight.

"Nothing here," one of them said. Ransm recognized the voice at once as belonging to one of the guards he had run up against at the hedge. Evidently he hadn't fooled them as completely as he had thought.

"I saw him come in," the other said. "He's up here somewhere."

The light flashed into the Museum and wandered hesitantly over the slashed painting and broken bones and smashed cases. The Neanderthal skull grinned witlessly into the light.

"We'll have to search the place," the first voice said.

"Be careful," said the other.

Incredibly, a soft breeze rustled

in through the broken windows. It smelled wet and clean and fresh. Ransm breathed evenly, careful not to make a sound. He wasn't kidding himself. There wasn't a chance that they wouldn't find him and he knew it. And if they caught him here, that would be *it*.

The two guards came through the door.

There was just one thing to do and Ransm did it. He took deliberate aim and fired twice. The gun made two sharp puffing sounds and the tubelight dropped to the floor. Ransm took his time and fired twice more. Then he went over and picked up the tubelight.

Ransm was faintly surprised to find himself calm and his head clear. He'd better stay that way, he realized. The break was still a week away. The easy part was over—and now the tough part began. It was easy enough to kill a man, but getting away with it was something else again.

He ripped off the uniforms of the guards and tore them into strips with which he tied up the wounds as well as he could. There hadn't been much bleeding yet, fortunately. It would be just too bad if the bodies were found in the Museum—they'd come for him in nothing flat.

One at a time, he carried the bodies out of the Anthropology Building and down the empty cement walks in the moonlight. The somewhat macabre humor of the situation did not escape him. If anyone had told him fifteen years ago that one night he would be carrying bodies along the sidewalk to hide them from the police he would have dismissed the talk as insane. But here he was. He carried them into the old gymnasium and left them in the empty swimming pool in the basement. Then he went back to the Museum and cleaned up the few traces of blood he could find, picked up the box, and slipped out of the university grounds through the hedge.

It was over and now the reaction set in. His throat was dry and he saw waiting enemies in every shadow. He jumped at tiny sounds in the night. His walk was almost a run and he thought he saw suspicious eyes in every window. He could imagine telecom calls being placed to the police, the moan of sirens whining through the streets . . .

He walked on, his mind racing ahead of him. They'd find the bodies all right, no question about that. When? Within twenty four hours, certainly. He couldn't count on more than that. When the alarm went out, they'd get around to him within two days at the outside even if they didn't find any signs of his presence in the Museum. He took a deep breath. He had possibly three days before they got him.

And that wasn't enough time.

Ransm hurried through the dark streets with the box under his arm. He might as well check in

with the others, he figured. They wouldn't be on his trail yet. After that, he didn't know. He couldn't get them involved, not with the break so near, and yet he didn't stand a chance without them.

He passed the bleak area where one of the atomic bombs had hit and after that the city was better lighted. He kept to streets that were little used, but even there the wanted signs were everywhere. One of them took up an entire adboard:

WANTED!

WILLM DALKR
ROCKET PILOT
THIS MAN IS DANGEROUS

Any citizen with knowledge of this man's whereabouts is ordered to report at once to the Central Corps of the People's Police

There was a photograph of the red-haired Dalkr in his old captain's uniform. Ransm wondered how long it would be before his picture was up on the adboards. He had seen a lot of wanted signs on Dalkr — they must really be after him. Why? Ransm didn't like to guess.

It was four in the morning and the streets were practically deserted. As he walked along the still-glistening pathways he could almost imagine that nothing had changed, that the city was just asleep and would come to life again with the dawn. He shook his head. It would be a long, long time before life came back to the city.

He had just turned into Eighteenth Street—now renamed Sardn Avenue in honor of the Manager —when his wrist gave a short, urgent buzz. Ransm stopped in his tracks. He looked around to make certain that he was unobserved and then pulled back his right sleeve.

The light built into his watch was red.

Ransm started walking ahead mechanically, an icy fear screaming in his mind. That red light could have only one meaning. The purge was on—they were rounding up the last of the scientists. If only they could have waited one more week—

But they hadn't. He hurried around the corner. There was no light on in Adamsn's. It might be a trap, of course, but if they knew about Adamsn it was all over anyway. He drew his revolver and knocked swiftly on the door. The jewelry glittered behind the store window.

The door opened.

"Come on in," Adamsn whispered. "It's okay so far."

Ransm stepped inside and locked the door behind him.

"Glad you made it, Kyl," Adamsn said. "They got most of us."

"What—"

"Can't talk here. Get below; I'll stay up here and wait for the others—if there are any others."

Ransm went into the back room and through the cellar door, the

box still under his arm. He started down the stairs.

"Ransm," he said loudly to identify himself.

"Come ahead, Doc." a voice answered him.

Ransm followed a dark shadow across the gloomy basement and through another door into a brightly lighted room. Ten men were already there and the air was blue with smoke. His guide turned around.

It was Willm Dalkr.

II

Willm Dalkr was a short, wiry man with an unruly shock of red hair. His blue eyes were quick and restless and he never seemed completely at ease on the ground. Dalkr was a rocket man, and when they had outlawed space they had taken away his home.

Ransm felt better when he saw Dalkr — the man inspired confidence. And he was the one man they *had* to have.

"Who'd they get?" Ransm asked, putting the box down carefully on an empty chair.

"Too many," Dalkr said rapidly, pacing up and down. "Too damned many. Six of the men are already at the Ship. There are twelve of us here, counting yourself, and Adamsn is upstairs in the store. That's it."

Ransm felt a sick feeling in his stomach. Nineteen left — out of fifty.

The men looked like twisted statues under the naked white lights. The whole room was charged with an atmosphere of unreality, as though the very air itself knew that these silent men were living on borrowed time. It was like a painting that you glimpse briefly, expecting to pass it by and never see it again.

"What happens now?" asked Ransm slowly. "What can we do?"

"We can't do much of anything," Dalkr said. "We have to sit and wait until the last possible moment, to give everyone a chance to get here. It won't be the most pleasant couple of hours you've ever spent."

Dr. Russl Shafr, the physicist, said something to the man next to him and they both laughed. Ransm felt a sudden unreasoning pride that he was associated with men who could still laugh in a world gone mad. The human race was a wonderful thing—sometimes.

"After we wait, what then?"

"If they don't get us in the meantime," Dalkr said, "there's just one thing we can do. We'll have to try to take her off tonight instead of in a week from now. It's the only chance we've got."

"How much of a chance is it?" Ransm asked. "The Ship isn't ready yet."

Dalkr shrugged. "It's *a* chance —that makes it the best we've got. She's never been tested, and there are some parts that we haven't been able to check properly. But we've done a lot this past year— she's loaded with fuel and equip-

ment and we've fixed the leads. We'll be low on food, but that isn't our main problem right now."

"Men?" Ransm suggested.

"*Man*, to narrow it down," Dalkr said, lighting a cigarette and inhaling it in short, nervous puffs. "And *Gunnisn* to be specific. Not just anyone can handle that baby. No offense to the rest of you, of course, but you're not spacemen. Before you can do your work, we have to get the Ship off. We can do it shorthanded if we just forget about time—no doubt about that. But short handed doesn't mean single handed. The Ship wasn't designed that way and that's all there is to it. Knowls and Kingstn and Crosst are here, and Edwrds is on the Ship. Okay so far—but we need another man, and it had better be Gunnisn. We haven't heard from him yet, and they may have him. If they do we're up against it for keeps."

"Gunnisn will get here if he has any chance at all," Ransm said. "How about the Ship—are they on to it?"

"I don't know. Evidently they don't know about this place yet, or at least that's what they want us to think. Either they don't have any suspicions about the Ship or else they're waiting to collar all of us together in one prize package; there's no sign of alarm so far. Flip a coin and you'll have about as much up-to-date information as we do."

Ransm sank into a chair and glanced at his watch. It was four-thirty—that gave them about an hour and a half until dawn. One of his problems was solved at any rate, he reflected. It didn't matter now about the two guards, and they were after everyone, not just him. Not much consolation, perhaps, but he felt better.

"So we wait," Ransm said softly.

"That's it," Dalkr said. "We wait."

The smoke was thick in the little room and the faces of the men were white and strained under the naked lights. No matter how relaxed they tried to appear, panic was in the room with them—silent, waiting. They knew that somewhere in the night their friends were dying alone and it was bitter knowledge. They talked and smoked and didn't look into each other's eyes. The air was charged with electricity.

"Gunnisn's got to make it," Dalkr said finally. "We can't go without him."

They waited.

Out in the darkness that surrounded them, death walked through the black streets of the city.

Ransm sat quietly and looked at the faces of his friends. Here we are, he thought with the wonder that reflection always brought to him. Here we are in this little room—and what a strange and twisted pathway it was that guided us here!

The destinies of men were uncertain things at best, he reflected. Or were they? It all depended on

the point of view. He lit his pipe and puffed on it slowly. The tobacco calmed his nerves and he sat and watched the blue smoke coil up towards the ceiling.

He had often thought that it was incredible what had happened to the world. When the Irth was born, the life complex had been born with it. Throughout the tortuous millenia life had developed in its infinitely slow patterns until the first men and the apes evolved from a common ancestor. Men had banded together in local groups and the development of language had enabled them to cooperate effectively. The society had replaced the individual as the primary unit in the struggle for survival and — due to the communicative aspects of language — mankind became the heir to a rich non-physical inheritance which they termed culture. Great civilizations waxed and waned and now, a paltry few thousands of years after the emergence of man, the brainy animal, the world was in total chaos. It was a monstrous drama of cosmic irony.

In its wake, mankind had left the Irth a legacy of organized slaughter, famine, and devastation. It had left love and laughter, art and literature and music. And it had left one thing more—science. Science had evolved out of magic and religion and campfires in the night. Science was a technique in the search for truth. Down through the years, through all the wars and intrigues and stupidities, science had marched forward, step by patient step. Men were learning.

The atom was split. Scientists looked into the minds of men and studied their histories and their cultures. The first shining ships were launched into the deeps of space and man's greatest adventure was underway. The stars moved ever nearer and the inspired pen of Jon Sharlnd ushered in a new renaissance in literature. All of the needed knowledge was there, the gift of science. All of the dreams were there, the gifts of men. The Golden Age of Irth had been at hand.

But it was not to be. The old, old game of deceit and self deception waltzed on into the night. Science and the petty desires of little men waged a pell-mell race through history—and the darkness won. Scientists went to work for the legions of war as their price for existence, and the scientists had knowledge at their disposal. The forces of darkness could not be stopped — had mankind taken the wrong path, or was there a basic defect in men which would one day lead to their extinction and replacement on Irth? Ransm didn't know.

The wars had become cataclysmic. The Irth was ravaged. People who had been asleep woke up to find their world in flames and the people revolted. As usual, and with the assistance of the litttle men who were always grasping for

power in their midst, they had turned on the wrong scapegoat. Instead of rising up against the dictators and the social crackpots who had destroyed them, they lashed out at science which had again and again pointed the way to safety. Because they had never taken the trouble to learn what it was, they feared it — and they wiped out their one hope.

The physical sciences had been the first to go, and then the social sciences. The universities were closed. Literature and art became sterile functions of a static state and Jon Sharlnd was executed by the People's Police. Science, on the brink of the Golden Age, came to a standstill. The first interstellar spaceship was abandoned and became a feared and hated monument to the past, where twin searchlights blazed at night in beacons of mockery.

The few scientists who survived the early purges were living on borrowed time and knew it. They drifted together in undercover groups—not out of hope or plan for the future, but driven out of loneliness and the simple desire for companionship. They wanted to talk and laugh and drink and think what they pleased. But they couldn't turn off their minds and the plans developed.

They soon found that they could make no headway against the powers that controlled the Irth. They were too few and too closely watched. They had to have help. It was Willm Daikr who had suggested a possible solution—since there was no help to be had on Irth, they would have to look elsewhere. No intelligent life had been found on Irth's neighboring planets. That left the stars.

Without any formal organization or wasted oratory, the scientists went to work. They had help, of course—there were silent men in all groups who were willing to fight for freedom. They dug a tunnel from Adamsn's to the Ship, and slipped men inside in the deserted hours of early morning. While the ignorant and the frightened looked on mindlessly and the searchlights crossed in the sky, the scientists worked their slow magic in the monument to the past.

And now, when a chance for victory was in sight, the forces of darkness had struck again. Ransm looked around him at the pale faces of his friends. Did they have a chance, really? Were they doing the right thing? Could even their success bring light back to the dark Irth? He didn't know. But he did know that all civilizations, all cultures, had to move forward, to progress. The backward road led only to extinction. This way they had a hope, however slim.

They were scientists and they were men, and for them that was enough.

Five o'clock. The air was stale and the faces of the men were drawn with strain and weariness.

"We'll give him fifteen more

minutes," Dalkr said, grinding out a cigarette. "If he's not here by then—"

"Then *what?* Reubn Knowls asked flatly. "We can't go without him and you know it."

"We can't," Dalkr agreed. "But it's as good a way to die as the next one."

They waited.

Five-five. The naked lights took on a subtly different quality as the dawn drew near. There was nothing tangible about it, but every man in the room could sense the change. Five-eight. The men were tired and out of cigarettes. Five-ten—

There was a crash upstairs and the heavy sound of footsteps. The men got to their feet with guns in their hands and Ransm cocked his revolver. The steps came closer, across the basement floor. They stopped. The door swung open and Gunnisn lumbered through with a police officer under his arm.

"Gunnisn," Dalkr breathed with relief. "What the devil are you doing?"

Hary Gunnisn beamed broadly, his sweat-soaked face shining in the light. "Meet Mr. Taylr Graffs, late of the People's Police," he boomed. "Mr. Graffs and some friends came by to escort me on a little journey and—since I already had other plans—I decided to take Mr. Graffs along with *me*. His friends weren't able to come, unfortunately."

Hary Gunnisn was a powerful giant of a man with a pleasantly ugly face. He seemed to overflow with energy. His shirtsleeves were spotted with blood and he carried the terrified police officer under his arm with no visible effort at all.

"What'll we do with him?" Dalkr asked helplessly. "We can't just murder the man, and we don't dare leave him here."

Gunnisn smiled an enormous smile. "He's going along with us, I tell you! We're going to take Mr. Graffs for a re*al* ride. Come on, Will—you're getting old."

Ransm found himself grinning and some of the terrible tension in the room evaporated. Gunnisn was one of those men who made everyone else feel good just by looking at them. No matter what he did, he always seemed to be having the time of his life. Quite possibly, Ransm thought, he was.

Ransm checked his watch. Five-fifteen. "We'd better hit it," he said. "It'll be daylight soon."

Adamsn joined them and they lifted out a section of the wall and entered the tunnel. It was damp and dark and the beams from the tubelights looked moist and cold. Ransm carried the heavy box and kept his eyes on the hulking figure of Gunnisn ahead of him. The police office was still too frightened to speak and flopped along like a sack of grain.

The men were silent now. Every inch of the narrow tunnel held its memories — memories of long

nights of back-breaking labor, memories of friends who would never walk with them again, memories of hope and of the dreams of men.

Ransm walked through the gloom of the tunnel and a thrill of excitement washed the weariness from his body. Of course, the police might be waiting at the Ship. Or the Ship might not function properly—it was a thin gamble at best.

But if it worked, if it *worked* . . .

The stars.

The Ship had four great tail fins, used both for maneuvering in atmosphere and as a base upon which to land by means of the afterjets, and the tunnel came up right in the middle of them under the jets — no mean engineering feat in itself. The mouth of the tunnel was covered by a close-fitting slab of artificial rock, well enough made so that it could stand a fairly minute inspection. There had been no inspections, however. The Ship rested in a restricted area, and the people were mortally afraid of it—that was the real reason why it had not been destroyed long ago; they didn't know what else to do with it, so they had turned it into a monument.

As is usually the case with things that are ill-understood and feared, an intricate cult of legend had grown up around the silent Ship. It was generally believed—a belief systematically supported by the government of Manager Sardn — that the people's revolution had prevented a cosmic disaster, and that if the Ship ever took off with its limitless energies it would mean the complete annihilation of Irth.

Ransm was the sixth man out of the tunnel, right behind Gunnisn and the inert officer. He climbed the cold metal ladder up the paint-spattered side of the Ship to the entry port, carefully balancing the box under his arm. There was no sign of the police and the city was silent around them. The twin searchlights crossed and recrossed above his head, and as he slipped into the Ship the first glow of false dawn was beginning to sift through the darkness.

He worked his way along the catwalk. The scuffling sounds of the men echoed with a muffled hollowness through the great shell of the Ship. The catwalk lay along the spaceship's vertical axis, which was horizontal with respect to artificial gravity during free flight, and had been designed only incidentally as a ladder. There had been no time to install conveniences on the experimental spaceship, and it was tough going.

He climbed through another port into the large chamber just under the control room and was able to move around with some ease. He stowed the box in a locker and hoisted himself into the acceleration couch that had been assigned to him. He fastened the

straps and crossed his fingers. He was quite convinced, from an objective point of view, that crossing one's fingers was of no use whatsoever—but he derived some comfort from it anyhow.

This was his first space flight. He had been on the great Irth rockets, of course, which had been used for long distance trips, but never on a spaceship. Space travel had not had time to develop into an everday proposition, and since no life of any kindred sort had been found on Irth's neighboring planets there had been no recognizable cultures to study and thus no need for anthropologists. There *had* been a project underway to study alien life forms, and some preliminary field work had been done, but field work is not easy in a spacesuit. The project had been outlawed with the banning of space travel, and Ransm had never had the chance to go.

There was nothing for him to do except wait. Gunnisn had given the police officer a knock-out injection and gone into the control room with Dalkr and Edwrds. Knowls and Kingstn and Crosst were at their posts, and Dr. Shafr was standing by in the atomic engine room. He could see a segment of the control room and had an impression of off-center geometry, since the control room, too, was designed for horizontal operation and the controls were movable for vertical take-offs.

A high-pitched whistle whined through the Ship and there were sharp cracking sounds in the walls. Relays clicked. The Ship was alive.

Gunnisn swung his big body gracefully into the chamber and grinned at them. "All set?" he boomed.

"As set as we'll ever be," Ransm said.

"Well, don't let it get you. The first time up is always pretty bad, but you'll get used to it. There won't be any real danger until we switch over to the hyperdrive."

"Then what?" asked Ransm.

"Then we've got something better than a fifty-fifty chance," Gunnisn said cheerfully. "See you all in hell."

Gunnisn ducked back into the control room. For a long moment there was silence.

"One minute until take-off," the intercom speaker said.

Ransm lay very still, listening to the ticking of his watch. The palms of his hands were wet with sweat. He tried to relax but it was impossible. On the other side of the wall at his side, cool and familiar, was the morning air of Irth. In a few short seconds, there would be nothing there—nothing at all.

Coffins of steel.

A crashing roar from the tail of the Ship—and a pause. Ransm clenched his fists. Had it failed? Were they still on Irth?

A mighty iron fist slammed into his chest and he gasped with desperate fear. His body pressed back

into the couch and he couldn't breathe. He tried to scream as his throat constricted. His mind recoiled on the brink of horror and drifted down into a soft abyss of darkness.

The Ship had left the Irth.

III

Space. Even on his own planet, a man is but a tiny thing—and when he ventures out into the deeps between the worlds with only a sheet of metal between his body and infinity it seems incredible that he should live.

Ransm opened his eyes. Instantly, with a certainty that had no basis in reason, he knew that they were alone in the universe and that their home was far—incredibly far—behind them. Now, in truth, the Ship was the only home they had.

He unbuckled the straps and climbed down from the acceleration couch. He could stand erect without difficulty because of the atomic-powered artificial gravity. The Ship was now orientated with respect to her horizontal axis and the impression of crooked geometry was gone.

"Okay now?" asked Jef Kingstn.

"I think so," Ransm said, trying to keep the shakiness out of his voice.

"We've orbited around the Irth to pick up escape velocity," Kingstn told him. "You won't notice any change when we reach it. We want to get clear of the Irth before we try the new drive—that way if it doesn't work it won't hurt anyone but ourselves."

The engines were a low hum in the tail of the Ship and Ransm remembered with a start that only a few minutes ago he had climbed up out of the tunnel under the jets—jets that were now blazing

with the white-hot energy of atomic fire. There was a slight vibration in the walls and the other men were talking to each other in low tones. It was difficult to realize, inside the Ship, that any fundamental change had taken place. But in his mind's eye Ransm could see the white flame of the jets spurting silently into the blackness behind them and the silver arrow of the Ship knifing through the void. It was an eerie feeling.

Kingstn moved on to check Adamsn, who was just returning to consciousness in the next couch. Ransm stood still, holding onto a metal brace, waiting for the shakiness to go away. Soon now they would be trying the new drive. Ransm didn't allow himself to worry about it. Dalkr and Edwrds must have been convinced that it would work, or the Ship never would have been built in the first place. That was good enough for him. Either it would work or they'd never know what happened.

Ransm stood quietly and lit his pipe. He was not a large man, but was well and compactly built. His eyes were a deep and startling green and his hair had been a thick iron gray ever since he was thirty years old. He was now fifty-two, a young man in an age where the normal life span was upwards of one hundred and fifty years. He looked around him. The chamber was a large one, not much different in appearance from the passenger deck of an Irth rocket, though far more functional in design. It had an unfinished look about it, a naked quality, that made him feel small and lost. Who was it that had said that men built their material cultures nervously on the edge of the abyss? There was a lot to that, he knew. He hadn't realized how comforting little things like armchairs or rugs or wallpaper could be until he found himself without them.

He thought about many things, now that the Irth was lost to him, perhaps forever. He thought not only of the wars and horrors and deceptions, but also of all the things that had made life worth living. He thought of his wife Cristn who had died in the Plague because there had been no doctors to save her, and of their child that had never been born. He thought of the Museum in the late evening, of the trout streams in the mountains, and of the laughter of his friends. All that had been the Irth, and was no more.

"Ransm."

He turned around. Willm Dalkr beckoned to him from the control room door. His red hair was awry and his blue eyes were alive with the happiness that comes to a man when he does the work that he best knows how to do.

"I want you to see this, Kyl," he said.

Ransm followed him into the control room. Banks of switches and dials bewildered him, but he could see that the apparent con-

fusion was due primarily to his own lack of familiarity with the controls. Gunnisn's big body was hunched over his instrument board and Edwrds was busy feeding data into the computer. There were no windows—the Ship's eyes being in her radar and teleview equipment —but Ransm felt closer here, somehow, to what was Outside.

"Take a look at this," Dalkr said excitedly, flicking on the telescreen. Movement came into the screen—a square of pulsing gray light, streaked with white scratches of light.

"What is it?" Ransm asked, his mind already racing ahead to the stunning answer. "Is that—"

"It's the view forward. *Straight ahead.*"

Ransm was not a spaceman, but he was a scientist and he had a better than average knowledge of space flight and of astronomy—and he knew that space simply didn't look like that on a telescreen. Not *normal* space.

"It's the hyperdrive," he said softly, "You've got it on."

"No point in alarming the rest of you," Dalkr said. His blue eyes were shining with triumph. "Either it would work or it wouldn't, and when we got out far enough we threw her over."

The eerie feeling increased. Ransm stared at the telescreen in wonder. The Ship was sailing on an uncharted sea to forever; it was out into the unknown. They were no longer in three-dimensional space. Dalkr and the mild, bespectacled Edwrds had opened up the pathways to the stars, and the long way back to Irth.

"Now we've got a chance," Kyl Ransm said slowly.

The hum of the atomics throbbed through the great metal shell of the Ship and a chronometer clicked mechanically in the control room.

"Yes," said Willm Dalkr. "Now we've got a chance."

A chance. The tangled webs of Irth's strange history had led at last to this one exiled spaceship, flaming through an alien dimension light years away from the small planet that had given birth to the species called man. All the dark intrigues, the successes and the failures, were far behind them now, Ransm thought. And yet they had taken them with them, for the Ship, too, was a part of the history of mankind. Without the Ship and the hope it offered, unguessable billions of men would be born and live and die in the deadly, constricting air of ignorance and hate before the Irth could rise again in the rhythms of civilizations. That was a terrible price to pay for life.

The Ship flashed on through nothingness, a lance of light into the unknowable. Interstellar travel was possible in a universe in which velocity was limited by the speed of light—but it was not practical, because of the time factor involved. By using the energy of the atom to warp the Ship into a

higher dimension, Dalkr and Edwrds had brought the stars to within effective range. It was not that the Ship was moving at a speed intrinsically greater than that of earlier spaceships, but simply that it had less distance to traverse. The stars were closer together in hyperspace, in much the same fashion as the two ends of a piece of paper become adjacent to each other when the paper is folded in the middle.

The life of the Ship settled down into relative routine, and Ransm found himself with some time on his hands. He was a man who enjoyed his own company, as well as that of others, and he welcomed the opportunity to prowl around the Ship and relax and swap stories with the others. Life was so simple, he reflected, if people would only let it alone. If only they could go back to Irth to start over . . .

But they had to have help. They had to contact an intelligent civilization that could understand their problems and be far enough advanced to be able to offer concrete aid. No one on the Ship that Ransm talked to doubted that there was life of some sort on every planet of every star in the universe. The problem was to find a form of life that was sufficiently manlike to grasp their thought processes and means of communication. Already, Ransm had his doubts. Even on Irth, different cultures had difficulty in explaining shades of meaning to each other. Thought processes and symbols, like almost everything else, were culturally conditioned. They were looking for a needle in a haystack, one tree in the greatest forest ever imagined. What were the odds?

It was not a completely random search, of course. They could pick stars as much like the sun of Irth as possible, and land on planets roughly similar to the Irth. But it was still a long shot, and Ransm, better than anyone else, was in a position to appreciate the fact. They had no means of purely mental communication, and even if they had had such a device he doubted that it would have helped much. Alien thought processes, developed under utterly different conditions of heredity and environment, would be so much gibberish to an outsider. It was far worse than trying to discuss literature with a snail — at least the man and the snail would have a fund of sensation in common, even though it be limited to atmosphere and movement and rain.

More and more, the contents of the box from the Museum loomed large in his mind.

Ransm could not help but feel sorry for Taylr Graffs. The police officer was in a virtual paralysis of terror. He was a slow-witted man at best, and he understood nothing of what he heard and saw; he was like an illiterate with a book. He could not see why the Ship had not exploded at once,

as he had been taught that it would, and he was convinced that he was in the hands of fiends who had destroyed the Irth. He stood in mortal fear of the huge Hary Gunnisn — and Gunnisn, for his part, was at something of a loss as to what to do with Graffs now that he had dragged him along.

The Ship came out of hyperspace finally, back into the black velvet of the night seas of normal space. They had reached their destination, a class G star like their own sun, one of whose planets was Irthlike. The Ship swam through the great silence, her braking jets spurting out tongues of livid white atomic flame into the darkness.

It was three weeks since the Ship had left the Irth.

Ransm lay in the acceleration couch and prepared for the landing. They had rigged up a telescreen in the chamber so that they could see the same view that was visible from the control room. Dalkr and Gunnisn and Edwrds used earphones to keep in touch with each other in the sudden maelstrom of sound generated by atmospheric friction.

Ransm hung on and tried not to be afraid as the Ship spun on her axis and Gunnisn eased her down, closer and closer to the planet's surface. The pressure was not as bad as it had been on the initial take-off, and he was more accustomed to the Ship now. But he kept imagining the hurtling projectile of the spaceship, tearing through the skies above an alien planet, tearing through the air at an impossible velocity with the planet rising toward them, nearer and nearer—

They could see some topography now on the telescreen, and it was not encouraging. The planet presented an almost featureless expanse of brown plain, as nearly as he could tell, without a tree or a hill in sight. He held his breath as Gunnisn worked her down carefully, his big hands delicate and sensitive on the controls. The brown plain was closer and he could see the white flame from the jets churning into the ground. The Ship hovered briefly and seemed to hesitate, trembling with controlled power.

"Contact," said the intercom.

The Ship touched — *and kept on going.*

Ransm's face went white and his mind twisted with incredible thoughts. The Ship—the Ship was sinking into the planet's surface—there was nothing to stop them —the jets were going mad—the noise, the crashing *noise*—

Willm Dalkr, on the radar, got a confused impression of monstrous wormlike things that undulated around the Ship, aroused and angry from the lashing of the jets. The Ship sank steadily, deeper and deeper into the brown mass of the planet. He couldn't see anything and something clutched at his brain, coiling around it, crushing it . . .

Edwrds hit the emergency drive

switch and the Ship gave a shattering roar as she blasted into crazy acceleration. She slammed upward and burst out of the planet's yielding surface with a whistling scream.

Uncontrolled, with every man aboard her unconscious from the sudden pressure, the Ship shot into the void. Blackness enfolded her, and she lost herself in the dark immensities of space.

The universe was a vast chaos of roaring sound. Nothing else existed in all space. There was only sound. Ransm lay quite still, listening to it. It pounded and heaved in his ears. He opened his eyes, and the roaring stopped. There was no sound. The Ship was utterly silent around him, coasting through space.

He got uncertainly to his feet, looking confusedly around him as the others began to stir. He seemed to be carrying a terrible weight that dragged him down. Their first try had been a failure. All their work and sweat and dreams had come to nothing. They had reached the stars — and for what? Only now, in the strange stillness of the lifeless Ship, did he begin to realize the true hopelessness of their position. He noticed that the gravity was still working—that meant that the engines were still in partial operation. It was too late to turn back now; until they were far stronger then they were, there was nothing for them to return to. And they were completely, chillingly unprepared for going on.

They had pinned all their hopes on a blind alley. Unless —

Gunnisn and Edwrds and Dalkr joined them in the chamber, and the crew filtered up from the soundless engine room. No one spoke for a long minute, as though they found it difficult to believe that they were still alive and were still faced with the problems of life. Everything seemed very far away, a part of another world that no longer mattered.

"About another second would have done it," Gunnisn said at last. "We can thank Edwrds that we're still here."

"It *looked* like Irth," Dalkr said, lighting a cigarette and running his hand nervously through his red hair. "Same type sun, roughly the same shape to the planet—but what a difference!"

The great Ship floated on in free flight, her jets having cut out automatically after she was free of the alien planet.

"This doesn't look good, to put it mildly," Edwrds murmured, wiping off his glasses with a handkerchief. "We'd better stop right now and think this thing through —we might not be so lucky next time."

"Double check," said Gunnisn. "We can't go on blasting blindly away to nowhere."

"I told you, I told you," Taylr Graffs whispered, his pale eyes dilated. "You have offended the gods — it was your kind that de-

stroyed the Irth — we weren't *meant* to be out here—"

Gunnisn stared at him. "If you don't have anything to say, go off by yourself and say it," he said. "Maybe we should put you to sleep again."

"Let him alone, Hary," Ransm said. "He can't help it."

The Ship pushed on through a universe never before seen by men from Irth. The stars, once so full of hope, were cold eyes of mockery in the blackness. The men stood together in the silence of the great metal shell, as if to form a common alliance against the bleak gulfs that whispered Outside.

"We're going to have to find men, or something pretty close to it," Dalkr said. "We're not equipped to handle alien life forms; we can't even get started. We're running low on food, and we don't have an eternity to explore the universe."

The chilled steel of the great Ship seemed sterile and dead around them, resenting their life. The lights were dim.

"We can't just land on some planet that might support us and stay there," Edwrds pointed out. "Even if we could find one, we have no women with us and our race would die. We can't examine every planet in the universe even with the hyperdrive. We all left friends on Irth, who worked—and died, some of them—to give us this chance — we owe it to them to get back and do what we can. We've got to either find help or help ourselves by making this Ship so strong that we could return to the Irth without danger and use it as an impregnable base of operations."

Adamsn struck a match to light his cigarette and the sound was loud in the unnatural stillness.

Dr. Shafr nodded. "But we can't make the Ship that strong without setting her down somewhere," he said. "We can't do it on Irth because it's too closely watched; we wouldn't have a chance, any more than we did before. We need metals and minerals and food and time. It will have to be somewhere with conditions like Irth — we can't explore and hunt and mine and fix this Ship in spacesuits. If we could work with unlimited materials, in the open and away from any police, we could get something done. But *where?*"

"That's it," Edwrds agreed. "Where?"

Dalkr paced up and down the chamber, his footsteps echoing hollowly in the dead Ship. No one spoke of giving up. Failure was very close, but they were ready to go on trying. There was nothing else to do.

"It all comes back to that," Dalkr said slowly. "Whether we land to fix up the Ship or find help, we have got to find conditions that are almost *exactly* like the Irth's. A fairly close approximation won't do, as we found out. Someday, yes. But that doesn't help us now."

"It begins to look," said Dr. Shafr, "as if the Irth itself is the only answer. We need Irthlike conditions, or men, and freedom to work. A spaceship won't help us, no matter how far it can go. What we really need is a time machine."

The Ship lanced through space, with the black deeps of eternity all around her. The men laughed shortly.

"Travel through time," Dalkr mused. "That would be perfect — but it's impossible. We can't do it."

Ransm stepped forward in the silence.

"Time travel *is* possible," he said quietly. "We can do it, and we can do it in this Ship."

Ransm stood in the hollow vault of the Ship and looked into the incredulous eyes of his friends. He knew what they were thinking. It was not the first time that a man had gone insane in the limitless gulfs of space.

"Don't worry," he said. "I'm all right — and I think that it can be done."

"But Kyl," Dr. Shafr said. "I don't wish to seem overbearing but it simply can't be done. I think I have an open mind on such matters — anyone would have an open mind *here* — but physics is my specialty, just as yours is anthropology. I *know* that time travel — at least in our present state of knowledge — is an impossibility. Wishing won't make it so, and it doesn't seem fair to hold out hope to all of us when there is none there. We've got to face the facts."

"I am facing facts, Russl," Ransm said steadily. "I may be wrong, of course, but I think we can do it."

The naked walls of the Ship seemed to be a fragile barrier against the laughter of the stars. The Ship was growing cold . . .

"I don't see it," Dr. Shafr said. "It's all very well to talk about time as a river or something that flows on eternally, but that's poetry — not physics. Doing something about it is another matter — there aren't any boats that will sail back on *that* river. And this spaceship cannot exceed the speed of light, if that's what you're thinking, and circle back to land on the Irth in some hypothetical other-time. It won't do, Kyl. There just isn't any such thing as a time machine, and that's that."

"This Ship is a time machine," Ransm said.

The others just looked at him. They wanted desperately to believe in what he said, but they couldn't. Ransm didn't blame them. Their common sense alone told them that it couldn't be, that there was no hope.

"Time travel happens," Ransm said. "It happens, and I can prove it."

He walked over to the locker, his green eyes calm in the pale light of the Ship. He took out the box that he had taken from the Museum — when? It seemed an eternity ago, on a world that no

longer existed, that never *had* existed. He went back to the others, his heart beating rapidly.

The men watched him, remembering a hundred other friends who had taken too much too long. The ghosts and shadows of the vanished scientists of Irth walked with Ransm across the metal floor of the silent Ship, and the men said nothing, sharing their bitter knowledge.

That small box. Impossible. Still. . . .

"Look," said Ransm.

It was a scene out of madness, out of a dream. While the others stood like statues in the stillness of the Ship, Ransm put the box on a chair. He pried open the lid and lifted something out of the box where everyone could see it.

It was a human skull.

IV

Within the endless reaches of the known universe, the far-flung star galaxies drifted like spiralled jewels on an infinity of black velvet. Suns flared into intolerable brilliance and died. New suns were born. On all the myriad planets that circled forever around their billions of alien suns, life crawled and slithered and walked, lived in the air and burrowed deep into strange substances. Unguessable gulfs divided galaxy from galaxy, and sun from sun. And yet, all were one — parts of a dimly-imagined, Gargantuan whole. Life and energy whispered together through the great darkness of the deeps.

Through one tiny corner of a lonely galaxy, the Ship crawled through hyperspace, a mere shadow as seen from the three-dimensional universe. The mighty flame from her jets was an insignificant pin-point of light in a sea of blackness, her cargo a pitiable few of the universe's children, the species called man.

Nine weeks had passed since the Ship had left the Irth.

Ransm stood in the control room next to Willm Dalkr. He was hungry. There was no more tobacco and he could not smoke. The recovered water was flat as though it had been boiled. The Ship itself was warm again from the power of the atomics, but the coldness was inside him now, the coldness of despair. The chance was so small. . . .

"About set?" he asked again.

"I give us about a minute more," said Dalkr.

Ransm's watch clicked like a metronome in his ears. A long minute ticked by in the control room.

"Stand by," said Gunnisn.

Edwrds threw the switch. There was a short rumbling noise, a suspended moment of hesitation as the Ship seemed to pause, and then all was smooth again. The Ship had come out of hyperspace.

Ransm could see the familiar yellow sun ahead of them in the telescreen, hanging in emptiness. He could see the prominences, the eruptions of gas, the solar flares, the sunspots. The nine planets,

great and small, circled in their orbits. They were all there — the asteroids, the cold moons, the comets. They might have been approaching the same Irth they had left behind them, except for the stars. The stars were — different.

"All right so far," Ransm said. His hands were wet with sweat. His clothes were wrinkled and formless. There were deep shadows under his sunken eyes.

The Ship knifed through space, headed toward the third planet. The hum of the atomics purred through the cylinder of steel. Ransm stood silently. There was no excitement in him now. The fugitive Odyssey had marked them all, he thought. And he could see, in the black gulfs before him, the weary face of Jef Kingstn. Jef, who had died and whose body drifted alone among the stars. Where was he now?

The pitch of the jets rose suddenly to a shrill whine, died, and faltered into life again. A cold chill washed like ice through Ransm's veins.

"We're off course," Gunnisn reported tersely. "I can't control her."

Ransm clenched his fists in despair. Maybe the people of Irth were right. Maybe they should just give up. Quit. A man couldn't go on forever, fighting without hope, without victory or even a chance of victory. There was too much against them. They were piling up, the false hopes, the mistakes, the defeats . . .

"Hang on," Dalkr said. He paced up and down the control room, examining the dials one by one. "What do you make of it, Edwrds?"

"We're being deflected," Edwrds murmured, his thin body hunched over his instruments. "Seems to be some sort of an artificial barrier — can't tell for sure — maybe a force field. It's coming from the third planet, though. I'm almost certain of that."

"Try it again," Ransm said. Their calm acceptance of the facts had shamed him. "Let's see if we can get through."

Gunnisn, his big body lean and hard from an insufficient diet of synthetics, worked the controls carefully. The Ship started to respond, but the atomics whined dangerously and she veered off again.

"Can't do it," he said shortly. "Not unless we can get rid of whatever it is that's deflecting the Ship. We can't go through it."

"And we can't get rid of it, I'm afraid," Edwrds said. "It appears to be some kind of energy screen — very advanced stuff. We can't handle anything like that."

"We can't handle *anything*," muttered Gunnisn, smacking his first disgustedly into his palm. "If there were just something we could get to and understand, something we could slug it out with on even terms, *give* a little instead of taking it all the time!

I'm beginning to feel like an ant trying to tackle a flame thrower."

"Ants," said Dalkr. "Not a bad analogy."

The four men looked at each other in the naked light of the control room. Ransm could see the despair in their tired eyes. They had come so far, tried so hard, hoped for so much — and it had all come to nothing again.

"We can only make one more flight," Ransm said slowly, weighing each word. "Neither our food supply nor ourselves can stand another failure. We've got one more chance — just a possibility — still open to us. Or we can go back to the Irth we left and hope for a miracle. You'd better think it over. This is the last time. If we fail again, we fail forever."

The icy cold seeped like water through the Ship and every man was alone in the universe and afraid.

"We all feel the same way," Edwrds said.

"We'll try once more," said Dalkr.

Once more. The last time. Ransm stood in the control room, waiting. The black of space in the telescreen swirled and was replaced by the pulsing, cloudy gray. The Ship was back in hyperspace. His own words echoed in his mind:

"If we fail again, we fail forever."

The Ship, like a great fish, swam on through the smoky murkiness of hyperspace, by-passing a million strange worlds and stranger life forms. Ransm wondered about what incredible mysteries lay hidden behind that cloud of gray on the telescreen. Somewhere, he was sure, there were beings like men, and yet different from men in a thousand unknowable ways. What were they like, how did they live, what secrets did their cultures hold for the men from Irth? Someday, somehow, men might know those things, might solve the riddles of the universe. Men might do so much, go so far . . .

He thought about history, and the little, improbable things that had shaped the patterns of destiny. Commonplace, unsuspected things. Things known and unknown, famous and forgotten. A word, a thought, a breath of air.

Or a human skull.

Ransm had first seen the skull which he had taken from the Museum when he was working on an excavation sixteen years ago. Sixteen years. It seemed like an eternity.

There was absolutely nothing unusual about the skull except its age. That, in fact, was the point. It was in every respect a genuine and undeniable skull of *homo sapiens*, not one bit different from those studied by medical students at the university.

It was unquestionably almost a million years old and it had been found in a deposit from the Lower Pleistocene, dating back to a period just before the Second Ice Age. There was no possibility of

trickery — the skull was there, and it *had* been there for thousands upon thousands of years. And it was a modern, fully developed skull.

There had been men on Irth in the Lower Pleistocene, of course, and even before that in the Pliocene. But not *modern* men. There had been dawn men, Heidlbrg and Java men, in an age when there was not too much difference, to an untrained eye, between man-like apes and ape-like men. Thousands of years of geologic time, three glacial ages, Neandrthal and Cro-Magnn men, centuries of slow evolution separated the men of the Pleistocene from *homo sapiens.* No one, and least of all an anthropologist, could mistake a Pithecanthropus skull with its non-existent forehead and massive, chinless jaw for a skull of modern man.

This was the skull of *homo sapiens,* and it had been on the Irth before the existence of *homo sapiens.*

A mutation? But mutations do not work that way, and certainly not with such instantaneous completeness, any more than a modern ape can suddenly give birth to a man, or a fish to a mammal. Ransm could still remember the pounding of his heart. Every detail of the scene was imprinted indelibly on his mind — the blueness of the sky, the white cloud on the horizon, the scarred rocks in the pit. He had been almost hysterical with joy and the world was a supremely happy one. He had made the find of the century, a scientist's dream. Of course, there would be a battle royal when he published his material, heated arguments in the scientific journals . . .

But there had been no scientific journals. There had been only fear and the slow horror of watching his friends murdered in the night, relentlessly, one by one. Science was forbidden and research had become a crime.

They forgot one thing, however. Science was not that easy to stop. To stop science, they had to stop the minds of men. Ransm found then what he had always known to be true — that it made no difference whether or not he could publish his work, it made no difference whether there was any demand for it or not, it made no difference that the knowledge was his and his alone. He kept on, he risked his life, because he *wanted* to keep on, because he wanted to *know.*

The presence of modern man in the Pleistocene could mean only one thing. He had not been born there, his home was not there. He had come there, and there was only one place a modern man could come from. He had travelled through time.

It was true, as nearly as Ransm could discover from his friends, that time travel was impossible at the present time. His friends had assured him that it would always

be impossible, but he doubted it. There was the skull, and that was the final, irrefutable argument. Once the automobile, too, had been impossible, and it had even been proven mathematically that flight in heavier-than-air craft was a complete physical impossibility. Time travel might be impossible at the moment, he felt, but that did not necessarily mean that it would be impossible forever. Who could say what new laws might be discovered by the minds of men? What cave man could have designed a ship to reach the farthest stars?

But he was not entirely satisfied with his reasoning. There had been travel through time — that much was indisputable. The evidence was there for all to see. And yet, the laws of science said that time travel was impossible, and science was no longer an uncertain and groping infant. It had a nasty habit of being right.

The problem worried him. He was certain that he was on the track of something big, but it eluded him. The more he thought about it, the more confused he became. And there was so much else to occupy his time. Just staying alive and out of the hands of the police was a major effort.

But he could not forget the skull. It had become a part of his life. When the plan to leave the Irth had been formulated, he had gone back to the Museum and taken it from its hiding place. And it had changed the history of the human race.

It was not until the Ship was actually in hyperspace, with the presence of an infinity of inhabited worlds forcibly intruding upon his consciousness, that Ransm had seen the truth. It was almost painfully obvious once he had the key to the solution, as most great discoveries are. Any fool could make a wheel once he knew what he was doing, but it took thousands of slow years before the first wheel had been invented by man.

It was known that life was a complex of factors and was the same process everywhere. Life was a principle of interaction, a force that existed on every world known to man. It was the same life everywhere, but the forms it took were conditioned by its environment. *Under exactly the same conditions, life would develop in exactly the same way.*

The man whose skull Ransm had found *had* travelled in time. Not backward in time, nor forward, nor sidewise, but simply from one *stage of development* to another, one *world* to another.

Given a planet exactly like the Irth, and man would evolve there just as he had on Irth, and for the same reasons. *Even his history would be the same.* Of course, no two planets could be exactly alike, in every detail. But they could be very close when you had an infinity of worlds to choose from, and their histories would parallel each other. There would

be minor variations, but the broad outlines would be the same. Planets which had been born at different times, but which were fundamentally identical, would be in different stages of development at a given time. They would be living in different parts of history. When you went from one to another, you were in effect travelling in time — either backward or forward, depending upon the age of the planet visited. The man whose skull he had found had come from an Irth-planet further advanced than the Irth — possibly the very one that was now surrounded by a force screen.

When he had first explained his theory to the men on the Ship, they had gone to work. Time was running out on them. They had photographed the galaxy, scanned, probed, studied. They had found only two Irth-planets, each circling suns like the sun of Irth. They had tried one of them and failed.

There was one to go, and if it didn't work this time it would never work. That would be it. The end. Death for the Ship and for her crew, and centuries of untold misery for the Irth. It was a terrible responsibility, and Ransm couldn't be sure. He thought that he was right — there seemed to be no other explanation. The skull was no accident; things didn't just happen. But he couldn't *know.*

The Ship came out of hyperspace and Ransm saw the sun.

Ransm felt himself again respond to the alien sameness of another star system. The sun was the sun of Irth, the planets moved in their familiar elliptical orbits. Down there, on a world of green, the great drama of man had been enacted once more, millions upon millions of miles from the distant Irth. All the friends that he had known lived again, or were yet to be.

A voice pulsed in his mind. Wave after wave of insistent, mocking words whispered like a cold wind through his brain. This isn't Irth, this isn't Irth. You're wrong, wrong, there's nothing here. Dead end, defeat, wrong. You're fooling yourself, tricking yourself. This isn't Irth, *isn't Irth,* isn't Irth, *isn't . . .*

The Ship cut through the black ink of space — a tired swimmer, eager for the sunny shore and rest at last. Ransm stood wearily, his hands in his pockets, watching the telescreen. His iron gray hair was long and needed cutting. His stomach was a tight knot of muscle and his green eyes were bloodshot and bright. More than anything else in the universe he wanted a drink of real water. He wanted a drink of fresh, clean cool water that sparkled up from a nest of gnarled brown roots in the cold depths of a forest spring. He could taste it in his dry mouth. He could see the white grains of fine sand on the floor of the forest pool. He felt the clean water bubble through his hands and the dampness of the

knees of his clothes where he knelt down to drink.

"No trouble yet," Gunnisn said, his unshaven face wild and primeval in the naked light of the control room.

"I can't detect anything unusual," Edwrds reported. "No waves of man-made origin in the ether at all."

"Take her in," Dalkr said softly. "Take her in."

The braking rockets flared into life. The Ship spun on her axis and settled on a column of fire. She whistled through atmosphere, thin at first, then streaked with ribbons of white clouds. She hovered, a slow silver arrow in a sky of brilliant blue. She inched down through a mass of green vegetation. She hesitated and touched the ground.

"Contact," said the intercom.

It was twelve weeks since the Ship had left the Irth.

Chemical sprays spurted from the sides of the Ship and extinguished the fires set by the jets. There was a deafening silence. The Ship was still.

Ransm lay in his acceleration couch. His heart pounded in his throat. They had landed, they had landed. But where were they? And *when?*

V

The Ship stood erect and silent in a burned-out circle in the thick green growth. Long black shadows crept across the land and the sun dipped slowly below the horizon. Night came to the jungle.

Ransm lay with his face to the metal wall. They had decided to wait until daylight before venturing outside the protection of the Ship, and now he could not sleep. The knowledge that the Ship was at last motionless disturbed him, just as he had many times awakened in his berth at night when his speeding train back on Irth had paused momentarily in some small village to take on passengers. He had never been able to sleep until the train picked up speed again, and now he was troubled by the same sensation.

It was dark in the Ship, with only a dim light burning in the control room where Gunnisn stood watch, but Ransm could imagine the other men lying awake even as he was, thinking, hoping, dreaming in the sheltering darkness. A fragment of conversation remembered from hours ago ran through his mind, repeated over and over again, monotonously, like a refrain from an ancient phonograph.

"It's some sort of a tropical area," he had said. "I can see that much. But it could be any time, anywhere."

"The air is okay," Dr. Shafr reported. "Mostly nitrogen. One fifth oxygen. No hármful gases in dangerous amounts."

"There's life out there," Edwrds said. "I can pick up moving forms —some small, others quite large. No telling what they are."

'It's some sort of a tropical area," he had said. "I can see that

much. But it could be any time, anywhere . . ."

What was on the other side of that wall, so close to his face? Was it really a world like the Irth he had known? Would it be past or future? Or *present?* Colossal irony — to come so far only to return to your starting point! But there were no jungles left on Irth, not after the wars.

A jungle. Perhaps even now the monstrous reptiles of yesterday were crashing through the swamps and the great killer lizards screamed hissing challenges to a fearful world. Or the future descendants of man might be only energy in the air. Or —

Exhaustion claimed him at last, and Ransm slept.

Dawn was breaking like lambent flame over the jungle when the men from Irth came out of the Ship. They climbed cautiously down the metal ladder, like a line of insects filing down the Ship's side, down from the entry port, down past the great fins. They passed the radiation-dampened jets — jets that had only hours ago been spurting white flames into the void. They stepped out on solid ground and the Ship towered above them.

Ransm stood and tasted the air. He breathed in long, slow swallows. The moist, fresh air was alive with the smells of growing things. It was deliciously vibrant after the flat air of the Ship. Old, familiar sounds of life whispered in from the jungle around them and he was made forcibly aware of the sterile silence of the Ship and the awful emptiness of space. He could see flashes of color gleaming on the vines. The songs of birds murmured nostalgically on the gentle wind.

The men were silent, brought back miraculously from a living death they had thought would last forever. They were tired and tense and thin, but a new light shone in their eyes. Hope and promise had been born again.

"Well, Kyl?" asked Dalkr with a smile. "What's your verdict?"

"We're in heaven," Ransm laughed.

"Try to be a bit more specific," Gunnisn advised loudly. "This can't be heaven if *I'm* in it."

"You can say that again," Knowls said.

Ransm looked around him at the friends who had come with him on this strangest of all Odysseys. He looked at the green jungle that exploded in tangled luxuriance beyond the burned-out circle where the Ship had come in. The sun was already hot in the morning sky and the sluggish breeze was warm and wet.

"My guess is that we're in a period corresponding to the fairly remote past of Irth," he said finally. "This looks like an extensive jungle growth, and there are no such habitable areas left on Irth since the atomic wars."

"You mean we may dine on

dinosaur tonight?" Gunnisn asked.

"Afraid not," Ransm said. "I hate to disappoint you — I'm a little disappointed myself — but I can see birds in those trees. Birds are a later life form than the dinosaurs; the two did not co-exist."

"Can you date it any closer than that?" Edwrds questioned slowly. "How about men? Mineral deposits?"

"I can't say until I have a chance to study the country more carefully," Ransm said. "As a working hypothesis, I'd put us in the relatively recent past as planetary histories go, but still considerably before the dawn of recorded history. It's hot and there are birds around, so I'll guess that we're in one of the interglacial periods. The question is, which one? It's entirely possible that we're early in the last one — in other words, our own general era. After all, a jungle is a jungle, and there were jungles on Irth as recently as two hundred years ago. Or there could be variations between Irth and this planet; I don't know yet."

"But if you had to guess," Dalkr asked, "where would you put us? Are there men around who can help us?

"I doubt it," Kyl Ransm said. "Of course, the only way to find out is to go and see, but we've picked up no man-made wavelengths of any kind here and that pretty well precludes the chance of a technology far enough advanced to be of assistance. Judging from the heat of that sun and what I can see of the jungle growth, though, I'd bet that a branch stem of some of our remote ancestors might very well be watching us from that jungle right now."

The world was awake around them now, and the men could hear crashing noises in the underbrush and noisy chatterings from the trees. The sun was molten fire in the light blue sky and the heat was rapidly becoming oppressive. The slow, turgid breeze was hot and heavy with moisture.

Ransm noticed Taylr Graffs sitting alone in the clearing, looking fearfully first at the jungle with its unknown sounds coming from green depths, and then at the Ship that had stolen him away from Irth. He was afraid almost to the point of derangement, and Gunnisn, touched in spite of himself, had tried to befriend him. But Graffs could not be reached. He had lived in a world with a closed system of values, and now that that world was gone he was incapable of adjusting to anything else.

"We're here anyhow, wherever it is," Dalkr said, looking uneasily at the green wall of the jungle. "Now let's get to work."

The wind died under the burning sun and the air was still.

Ransm and Gunnisn crossed the charred clearing with rifles under their arms and picked their way into the shadows of the jungle. It felt good at first to get out

of the direct rays of the sun, but the motionless, suspended heat of the jungle was worse. It was difficult to find a path open through the tangled growth and hidden branches tore at their clothes.

Brilliantly colored birds flitted through the lofty tree tops and a horde of monkeys chattered on the limbs. Ransm watched carefully for snakes, his rifle ready with the safety off. He had an odd sensation that he was being watched, and he knew that it was not due solely to his imagination. The jungle teemed with life — he could *feel* it all around him. He checked the foliage carefully as he went along, trying to identify classes and species.

The hot air was thick with insects of every description and he had to slap his face constantly with his free hand. His clothes were soaked with sweat in the humid heat.

"Not such a paradise after all," Gunnisn panted. "This is rugged country."

"We shouldn't have to go far," Ransm said. "There's game galore all around us if we could just get a clear shot."

They worked their way into the jungle, hacking through the riot of vegetation. Their clothes were torn and their arms and legs were bleeding from countless scratches when they suddenly came to the edge of a large, grassy clearing. It was like a small plain. A little stream wound through it and lost itself again in the jungle. There were flowers in the tall grass and Ransm could see the green foothills of a low mountain range rising over the trees in the distance.

"Must be some sort of large plain beyond that stretch of jungle," Gunnisn said. "I think we've come far enough."

Ransm nodded. "All we have to do now is wait," he agreed.

They concealed themselves in the brush where they had a clear shot into the open grassland and waited silently. Ransm watched the sparkling water of the stream glistening in the sunlight and licked his dry lips. The heat was terrible.

He soon forgot his discomfort, however. The two men watched in fascination as a band of apes swung down out of the trees and shambled across the clearing to drink. Ransm counted sixteen of them, and they were all somewhat larger than the few living apes he had seen on Irth and subtly different in body type, looking like a cross between a gibbon and a gorilla. They drank greedily and then disappeared back into the trees. Several elephants, of a type long extinct upon the Irth, followed them shortly and then moved off along what appeared to be a game trail on the other side of the clearing.

A veritable parade of animals — great cats, tiny horses, a nightmare thing that looked like an insane cross between a reptile and a mammal — emerged from the

dark shadows of the jungle and passed before their eyes. Ransm thrilled with the knowledge that he was looking in on a veritable laboratory of life, the scene of nature's greatest experiments. There was simply no telling what incredible things lurked in the jungle depths around them—huge snakes and beast-like men, beauty and horror and wonder, a profusion of choking plant life, perhaps even a sluggish dinosaur that had managed to survive the last ice age and was even now feeding on the swarm of mammals that had replaced him. . . .

A herd of antelope-like animals appeared in the clearing and the two men levelled their rifles carefully. They fired twice and two of the surprised animals collapsed in the grass. The others galloped off down the game trail. The rifle reports were loud and unnatural in the still air and for a brief moment the chatter and hum of the jungle's teeming life died around them. Then the noises started up again and the birds sang in the trees as before.

Ransm and Gunnisn took a long drink from the fresh, slightly warm stream and then skinned and cleaned the animals they had killed. The animals were smaller than antelopes, Ransm noticed, and were marsupial. But their flesh was firm and clean. Ransm chuckled to himself.

"What's so funny?" Gunnisn asked, wiping the sweat out of his eyes.

"I was just thinking," Ransm said, grinning. "I can just imagine some freak of preservation that would enable some future anthropologist to dig up these bones thousands of years from now. Can't you just see the expression on his face when he finds a lead bullet lodged firmly in an extinct marsupial antelope skull? I bet he gives up drinking for the rest of his life."

They shouldered the meat and started back for the Ship. The humid heat seemed to increase by the second, and Ransm could see ominous black clouds massing in the sky. They worked their way swiftly along the path they had hacked in the jungle, anxious to avoid the torrential downpour that they knew was imminent. Ransm's green eyes darted from left to right, up and down, trying to take in everything at once. If only they had more time! There was so much to see, so much to remember.

Heavy thunder rolled and muttered in the west and the wind rustled again through the great trees. Forgetting even to be tired, their hearts light with hope, the two men hurried on through the jungle that grew in the dawn of time.

The green planet boiled with life under a tropic sun by day and dreamed beneath a million stars by night. Strange days shaded into stranger nights, and the Ship stood nervously at rest, taut, waiting again to launch herself into the

black seas of space from which she had come.

It was unfortunate, Ransm thought, that the Ship could not be used as an exploratory scout craft, but it was far too large and fast for such work. The Ship's lack of mobility chained the men to a limited area as they worked, but Ransm managed to cover a considerable amount of the surrounding territory as the long days passed into weeks and months. He got to know the jungle depths and the hidden glades and the grassy plains that stretched away to the blue mountains. His muscles hardened and his skin turned a golden bronze under the blazing sun. He watched the animals and hunted and photographed — and once he saw something that might have been a man.

He had been climbing a rocky trail through the foothills of the mountains beyond the plains when he was startled by a boulder crashing down from the heights ahead of him. He caught a brief glimpse of a bestial, snarling, ape-like figure before he ducked for cover under a ledge of rock. When he was able to go out into the open again, the animal was gone and he never saw it again. After that, he never went out alone.

Ransm was able to place the time sector with some exactness now. He had carefully studied the plants and rocks and animals and he was certain that the Ship had landed in a period corresponding to Irth's First Interglacial, about midway between the first and second ages of ice—a time a million years forgotten in the dust of Irth. It was difficult for him to shake off a feeling of strangeness, of unreality, of a dream-world, even with the naked realities of life and death all around him. The Ship had carried them across the universe, a million years into an alien past so they could fight to save their own future . . .

Ransm watched his friends in fascination and helped out where he could. Freed at last from the dark tyranny of Irth, with virtually unlimited resources at their disposal, the scientists worked against time under the burning sun. Not their own time, but the time of Irth clouded their minds with anxiety. Every hour, every minute, every second they delayed might mean another life destroyed on the wrecked planet of their birth, another friend carried off into the impersonal night and never seen again by living men.

Ransm prowled through the Ship, giving help where it was needed. Their goal, he knew, was to make the Ship an impregnable fortress with weapons powerful enough to compel respect. The scientists had learned that they could not sit aloof in an ivory tower as though they were somehow above the practical affairs of mankind. If they were to be free agents in a free way of life instead of hired servants of a system as outmoded as the fang and

claw struggle for existence that weaved its merciless way through the jungles that surrounded them, they had to fight for their beliefs. They had to fight fire with fire. With the all-powerful Ship as a toehold for freedom on the Irth, with all the weapons of science in their hands alone, the dignity of man could be reborn again. They might fail, of course. Ransm was under no illusions. But neither did he sell the scientists short. Men had known the laws of survival for centuries, known the patterns of a true civilization. They needed only to apply them, to assert them not as vague principles but as rules for living with power to back them up. The scientists would not repeat the mistakes of the past. They had learned their lessons in the toughest school of them all, and they would not forget them.

It was fortunate, Ransm saw, that they did not have to depend upon any last-minute invention to save them. Weapons and principles of the strength and complexity they needed were simply not developed overnight. But the scientists had only to draw upon their existing knowledge—they were able to *reconstruct* weapons that had been on the drawing boards during the final phases of the last mindless wars of Irth. Best of all, they were able to devise, by utilizing an extension of the principle of reversed artificial gravity, a workable force field surrounding the Ship, which rendered them invulnerable to attack from any weapon in the hands of the men who controlled the Irth. It was entirely possible that they would not have to use their destructive weapons at all, save for a few limited demonstrations of strength.

Ransm was glad that the killing might be at an end. He was ready and willing to fight if that was the only way, but he was sure that there were better methods at their disposal. He had worried about the techniques they had been forced to adopt. Did they really represent an improvement, or were they merely writing another dreary chapter in the long history of man's savagery to man? Were they only substituting one kind of dictatorship for another? What right had they to control the Irth, any more than any other group? Deep in his heart, however, he knew that they were right. All else had been tried and had failed terribly—the time had come to give rationality a chance. The scientists would not deprive any man of his liberty, nor dictate to him the life he must lead as long as he did not work to enslave his fellow men. The scientists would work for the happiness of all, not out of any mystic altruism that was feeble at best, but because they could see and clearly understand that happiness for all meant happiness for themselves.

The men from Irth worked and argued and relaxed by hunting as the long weeks passed. Here on this world were time and materials

they had lacked on Irth. The sun blazed down upon them from the blue sky and the teeming rains washed the jungle clean. At night they slept in the cooling breezes, and the silent Ship stood erect and waiting under the far-away stars that were her home.

The world knew that the Ship was leaving. Invisible eyes seemed to watch the clearing impatiently. A feeling of change hung suspended in the very air. The green jungle and the grassy plains and the distant blue of the mountains pressed breathlessly in upon the Ship, waiting.

It was thirty weeks since the Ship had left the Irth.

"It's strange to be leaving," Ransm said slowly, looking back at the green jungle steaming under the hot sun of high noon. "I hope we can come back again someday."

"Maybe," Gunnisn agreed, his powerful face softening briefly. "But it will be a long, long time, Kyl, before we ever stand in this clearing again."

They took a last look at the world around them and then climbed up the metal ladder to the entry port. The heavy door of the pressure chamber locked shut behind them. They were the last two men to come aboard, and the Ship stood alone in the deserted clearing.

Ransm followed Gunnisn up the catwalk to the control room. The dead atmosphere of the Ship already seemed stale to him after the fresh, wet air of the jungle. The metallic silence jarred on his nerves — it was as though he were working his way through a vast upended tomb. He was used to the odd geometry of the resting Ship now, but it still gave him a nightmare feeling, a feeling of subtle *wrongness*.

"We're all here now," Dalkr said, one hand resting lightly on the controls, his quick blue eyes flashing and eager at the prospect of getting back into space again. "Take your places and get set."

The cold metal walls of the Ship surrounded Ransm, confining him. Black shadows hovered under the naked lights like pools of ink. Even though the Ship was motionless on the ground, he sensed the gulfs of space outside. He shivered. Silly — but he knew that he would never get completely used to the black deeps of space, never be completely at home there as Dalkr and Gunnisn were, away from the sunlight and the green fields and the green smells of fresh air.

"Hold it a minute," Gunnisn said quietly. "Where's Graffs?"

The silence deepened in the Ship. The men turned and looked at each other. Ransm made a fast check and shook his head.

"Graffs isn't here," he said.

"Haven't you seen him?" Dalkr asked. "We thought he was with you."

Gunnisn frowned, suddenly

worried. "I thought he was in the Ship," he said. "I haven't seen him since last night."

The instruments of the control room gleamed coldly in their black settings and the tanned faces of the men looked artificial and alien under the white light.

"Search the Ship," Dalkr said finally. "He's got to be here somewhere."

The men fanned out through the long chambers and catwalks, their voices echoing hollowly in the empty silence as they called Graff's name. Ransm turned to Dalkr.

"He knew we were leaving, didn't he, Will?" he asked.

"Of course. I told him myself."

"I never should have brought him," Gunnisn said softly. "It was a crazy thing to do."

"I wonder," Ransm murmured, half to himself. "I wonder."

The men came back with their report. The cold silence filled the control room and the ticking of the chronometer was disturbing and mechanical in the stillness. It was settled. There was no doubt of it now.

Taylr Graffs was gone.

VI

A high, almost inaudible whistle whined through the Ship. The walls crackled with sharp snapping sounds. Relays clicked and circuits closed. Space swept suddenly closer as the Ship came to life again.

"We could never find him out there," Dalkr said. "Unless he wants to go back with us, there's no way we can force him."

"He's made his choice," Gunnisn said, trying to keep the emotion out of his voice. "I wish him well."

"Maybe he's the lucky one," Ransm said.

The Ship seemed coiled like a taut spring, waiting. Chemical antifire sprays sprinkled the ground around the Ship.

"Let's go," said Dalkr.

Ransm climbed into the acceleration couch and fastened the straps. The great chamber of the Ship hung suspended in time, apart from the world of life and death. He could see a scratch on the metal beam over his head, zigzagging whitely across the dark metal. He forced himself to breathe evenly.

The tail of the Ship erupted into life with a crashing roar. There was a pause. Ransm clenched his fists. A hurtling rock wall of pressure slammed his body back into the couch. He closed his eyes.

The Ship was back in space.

Her jets trailing white flame into the void, the Ship swam through black velvet, floating on a dark sea under the cold light of the stars. One moment she was clearly visible, a polished arrow of steel, and the next she flickered into hyperspace, a mere fugitive shadow in the depths of the universe.

Ransm stood by the telescreen, watching the swirling gray billow and curl smokily in the plate. He felt as though he were caught up

in an endless recurring dream that repeated itself forever, over and over again, like a circular silent film playing in a deserted theater. And yet he was happy, too. His mind was alert, reflecting on what had happened and what was to happen. The implications of what he had been through were so vast, so completely comprehensive, that he knew that he would never fully understand them. But the parts were falling into place now. He could almost see the picture . . .

"It's good to be going home," Dalkr said quietly.

Gunnisn smiled. "They're in for a rude awakening when we hit the Irth with this arsenal," he said. "I feel like a free man again."

"It's been a long time," said Edwrds softly. "A long time."

Ransm looked into the gray nothingness, thinking. He thought not of the victory that was at last in sight, nor yet of the billions of people, living and as yet unborn, who might now live their lives in peace. He thought of one man.

Taylr Graffs.

He walked out of the control room into the chamber where the men were laughing and talking together. He moved through the harsh white light to his locker and took down the box he had brought from the Museum. He opened it and took out the human skull that had changed their lives. He looked at it for a long time, listening to the distant hum of the jets.

"I wonder," he whispered, staring at the empty sockets of the skull. *"Were you a police officer, too?"*

Here in the loneliness of hyperspace, the facts took on a new and deeper significance. It was incredible, he thought. And yet, what could be more logical? The Ship had landed in a period corresponding to the First Interglacial on Irth. The Lower Pleistocene. A time before the invention of fire, a time when the dawn men were just beginning the long climb up from the brute.

The human skull he had found on Irth dated back to the same age, the Lower Pleistocene. And Taylr Graffs was back there now, alone on a world millions of miles from home.

Ransm replaced the skull in the locker and sat down in a wooden chair he had made — when? A week ago? Or hundreds of thousands of years ago? He forced himself to think logically, to analyze what he knew. Wasn't it possible, or even probable, that some anthropologist a million years from now would find the skull of Taylr Graffs just as he had found the skull on Irth? Would some man like himself — he wouldn't be named Kyl Ransm, of course, and the parallel would not be exact down to every detail — one day sit in a spaceship, even as he was now sitting, and think the same thoughts?

It all fitted together. It was too precise for coincidence. The planet they had visited that had the re-

pelling force screen — perhaps this skull had come from there; and what about the force screen itself? Hadn't they just developed such a device for the Ship themselves? Would it in time become a barrier around the Irth, just as it had around the other planet, to keep a future Ship from landing?

There was a reason for it, of course. Kyl Ransm could understand a part of it at least. Each culture had to develop with relative independence until a certain level of civilization had been attained. Frequent intrusions by more advanced cultures would wreak havoc with the development of other worlds and give the individual a fatalistic feeling of despair. This way each world charted its own course, and yet all were eternally the same.

Ransm wondered about how many Irth-planets there were. More than three, certainly. Was there some sort of conscious contact between those of them that were far enough advanced? Undoubtedly so. But the parallelism of the Irth-planets would not lead to a philosophy of determinism, he was sure of that. It just made the old equations more complex, and infinitely more wonderful. He knew that he could never live to understand it all, but he had been privileged to take a part in the greatest expansion yet of the knowledge of man. The scope of mankind had been extended infinitely—the great human drama was playing on a stage vast beyond belief, and all the tangled history of the Irth was but a fleeting scene in a greater play.

Nor was that all, he suddenly realized. The very fact that the other planet had had a force screen was proof that they would win the fight for Irth. It took science to build that screen, and it took science to see the reason for its existence. The Irth would be free.

It was possible, too, that the voyage of the Ship, as well as he himself, had a significance, a purpose, that he could not see. He smiled. Only a few hundred years ago men had loudly proclaimed that they knew all there was to know, that their knowledge was final and complete! He got to his feet and went back into the control room.

Dalkr and Gunnisn and Edwrds were busy at the instruments and the cloudy gray of hyperspace pulsed in the telescreen. The song of the jets throbbed through the great Ship. Gunnisn turned and smiled at him. Ransm smiled back. They shared the same magnificent thought, the same thrill. It dwarfed all that had gone before. It was the best part of the Odyssey to forever.

They were going home.

Back on the planet Earth, Taylr Graffs muttered nervously to himself in the empty clearings where the Ship had been. He had watched it leave from his place of hiding, with no feeling other than relief. Let them go in their high-handed

way. He had had more than enough of them.

Now he was alone, and it was better than being with them on the Ship.

Night was coming and he had killed an antelope and it was ready to cook. He collected a pile of wood and bark in the darkness and lighted a fire with a match in the center of the clearing. He could take care of himself. Food, a fire, and a good place to sleep. A man could do worse.

The orange flames leaped up and flickered on the green trees.

Taylr Graffs finished his meal with a sigh of dull satisfaction and began settling down for the night.

A soft wind sighed through the jungle. Hidden in the shadows, a strange half-man watched the fire for a long, long time, and the dance of the flames was reflected redly in the dull depths of his slow sunken eyes.

COMING UP . . .

The lead story next month will be by a fairly new name with a fairly unusual type of stary. Erik van Lhin brings us POLICE YOUR PLANET, and a glimpse af what life may be for the colanists of Mars. It's space-opera written with camplete realism—samething which should be much more common than it is.

The planets are going to have many of the aspects of a colonial frontier, of caurse. But that daesn't mean that all the people there will be the pioneer type, or that everyone will be a miner or a gun-slick. Quite the contrary. It means yau'll have the towns with their normal quota of simple burghers, shop-keepers, petty politicians, daily workers, loafers, etc. It alsa means you'lll have to have a police force to handle the malcontents and the little gangs.

And when that police farçe begins ta become well established, you're in for trouble, unless human nature changes completely. In almast all such early, brawling cities, police and graft go hand in hand with local politics. Those on the in will try to stay there, and those who are out will try to get in. With the big power forty millian miles away, the local bass will have a field day, but it wan't be withaut opposition.

Now suppose the mother planet decides to clean up, and sends out a whale new police force? Don't think that the force already operating will give up! It will simply dig in. And yau'll fiiid that there are now two separate police forces, each busy arresting the others—so busy that they won't have time to take care of minor things like theft and murder!

It makes quite a yarn. Don't fail to get it in your next issue of SCIENCE FICTION ADVENTURES MAGAZINE!

Interplanetary Tin Can

BY ROSS ROCKLYNNE

ILLUSTRATED BY RAYMOND

When a couple of Texas cowboys built a rocket and covered it with tin, the whole world laughed at them. But it was no laughing matter to the governments that had to prevent that first flight!

It is true that, fifty years later, the Sustrian Ministry did publicize the truth. By that time, of course, world peace was assured, and the first men on the Moon were agreed that it had all paid off.

Outline Of History: Addenda

Standing abstractedly at the window of the ranchhouse kitchen drying dishes, Red Guthrie saw his partner come bowling down the road in a cloud of Texas dust. The rocket-car braked to a skidding stop. Jerry kicked open the

ranchhouse gate, then, suspecting Red was watching him, closed it gently as evidence he was holding in his temper.

"Red!" He bawled it out like a calf. Then he started across the yard to the porch, his big-booted feet smashing blue-bonnets.

Red opened the door. "I thought you were going to Austin?"

"I *was* in Austin. And I'm back. Read this."

"This" was the *Austin Herald.* It was rather beat up, as if Jerry had walloped it on somebody's head. Knowing Jerry's temper, Red wouldn't have been surprised if he had. He smoothed the paper out.

The headline, of course, was heavy-weight publicity for the Sustrian chemical fuel ship. "Pitero Mreno Says Failure Impossible."

"Turn the page," said Jerry impatiently. "Our so-called publicity is on page 3. Oh, boy, wait till you read it. Just what we need!" He paced up and down the porch, shaking his head.

Red found it.

LOCAL BOYS COMPETE WITH SUSTRIAN ASTRONAUTS

July 1, 1973 (CP)—In a tumbledown shack thirty miles from Austin, two boys, both raised on Texas ranches, are building a second space-ship, which is intended to beat Pitero Mreno's to the surface of the Moon.

The two boys are Gerald "Lanky" Hamilton and Ray "Red" Guthrie, formerly members in good standing with Austin's own Boy Scout Troop number 12.

They proudly told the editor of this paper they have "luney" ambitions, and maintain that they have "under construction" a "Moon-ship" which will be superior in its means of propulsion to Pitero's hundred-million dollar job. They intend to take off for the Moon about the same time as the Sustrian, ship. Says "Lanky" Hamilton stoutly, "We'll get there first, too!"

"Lanky" asserts he and his partner have not been under the influence of moonshine.

Scientists from Texas U., it is said, have suggested the boys take their coats along. It gets mighty cold out there!

Red grinned. "How corny can you get?" he asked Jerry. "So that went out over the CP. So what? So we're not scientists, we don't know nuthin' from nuthin'—only being graduate engineers from the same Texas U. they're so busy misquoting."

"Yeah," said Jerry resignedly. "A couple brainless Texas cowboys, that's us. All we did was corral, hogtie, and bulldoze a patent pending out of the United States government for an invention worth ten million dollars. Let me have that newspaper."

He tore it with extravagant delicateness into several pieces,

letting the pieces drift on the wind.

"Did you see the editor of the *Austin Herald?*" asked Red amusedly.

"What do you think?" snapped Jerry. "Why did you think that paper was so beat up? Let's have some coffee. We got to think—I stoutly maintain!"

"Okay—Lanky." Jerry aimed a kick at Red's pants. Red bent out of the way and went into the kitchen grinning.

Though there wasn't much to grin about, he reflected.

Red, who was the obverse of Jerry, being short and built comfortably around his middle-size equator, made coffee on the rusted burner while Jerry sat brooding at the kitchen table.

"It's dirty politics all around," Jerry muttered. "We've been framed. You listening, fathead?"

"Your words are spun of purest gold," murmured Red.

"One." Jerry ticked the points off on strong, brown fingers. "Gregory Smithson, the richest man in the United States, lends Pitero Mreno a hundred million dollars to build a space-ship.

"Two. I send in my application for a patent on our atomic gas-thrust motor. Much delay. Interminable search of a thousand scientific publications to make sure we have priority rights. Much searching of files. Legal delay. Finally a patent pending notice, six months late.

"Will you *please* quit banging around so much?"

Poor Jerry. This was getting him. Red quieted the cups.

"Three! We make application for a federal loan to build a space-ship. No answer to date, and that was six months ago.

"Four. I try to get a loan from the banks. 'Too big a risk, idea unsound.'

"Five. I decide if we get some favorable publicity, we'll find a backer. We got our publicity. Two spoons of sugar, Red, two. Boy, we sure did get publicity."

The coffee came, an adequate amount of brown liquid slopping around in the saucers. Jerry patiently emptied the saucer into the cup. He gulped. Then he went on:

"So Mreno *has* to succeed— if Smithson expects to get his money back. And we're being clamped down on for the same reason."

Red looked up. "You think that's it? That would mean banks, newspapers, the Patent Office, the Treasury, the whole United States. . . . Let's have that Boy Scout grip of yours again, fellow trooper! That means we've really got something if they're sitting on us that hard!"

"Sure does," said Jerry. He finished his coffee, staring at the brackish sediments. "They're trying to make a laughing stock of us. But we won't be a laughing stock if we land on the Moon first, will we?" He spoke studiedly, tapping at the cup.

Red surveyed him warily. "No—" Red grinned to himself; Jerry sometimes baited traps.

Jerry glared with eyes the same color as the blue-bonnets dotting the ranch.

"No, he says. No! How confident! How cocksure! Where, fellow trooper, will we get one hundred thousand dollars to put a beryllium-steel coat on her unlovely skeleton?"

Red's ample face grinned. "Got you that time, Jerry. I think I may have an answer at that. Let's go out and take a think."

Kicking chickens aside, they walked slowly across the dusty backyard toward the long jerry-built shack that housed the unclothed space-ship. Red was thinking. There was a plot, but it went deeper.

"Y'know," he said thoughtfully, "I think you've got the right idea, Jerry, but at the same time—uh-uh! A hundred million isn't enough. Actually, it's just small change. What if the issue is bigger than that? What if it's got something to do with international politics?"

Jerry stopped, started up again, fondling his square jaw.

"Could be! Smithson could have an agreement with Sustria of some kind. Minerals on the Moon. Maybe he gets a slice of the mining interests. Hell, there could be more to it than that. If Sustria lands on the Moon first, she skyrockets into the limelight of world affairs again. That would shoot Sustrian stocks sky-high, too. What a haul Smithson could make!"

He stopped for several seconds this time, clicking his front teeth in a thinking habit he had.

"That isn't all, fellow trooper," he mused. "The plot thickens. Sustria is the bogeyman of the world. The last war ruined her before her statesmen were forced to sign armistice papers. During the last ten years, she's been mobilizing again, aching for a good excuse to become a big power. The only reason she hasn't is because she doesn't have the support of the other outlaw nations. Not enough prestige. Sustria would have more prestige than you've got freckles if she landed on the Moon first."

Red ignored the crack about the freckles. "Maybe you've gone too far. What you're trying to say is that if *we* land on the Moon first, we—first-class members of Boy Scout Troop Number 12—will prevent the outbreak of another six-year war?"

They broke out laughing. Jerry stopped laughing first. "It ain't that funny, chum. We're still the key point in some kind of a thick plot."

They reached the shed, ducked inside. Hands on hips, they stood looking at their formless creation. Actually, almost everything was set up and ready to go. The instrument panel was a beauty. The various air filters, cooling and heating systems, vision plates and

some of the bare furniture were all solidly implanted. The skeleton was there, the atomic gas-thrust motor and the Venturi-jet tubes were still set to one side. They needed a hull, with all the expense and working time that that implied.

In the quiet of the shed, there was a rattling sound from the aft end of the unfinished ship. The eyes of the two men snapped in that direction. Jerry shoved Red to one side, started toward the sound.

Suddenly he yelled, "Red! Down!" Jerry was flat on his face, arms over his head. Hell broke loose. Red was down, too, and heard a roar. He was picked up and thrown. Light splashed brilliantly through the shed as Red landed. His fat saved him, but even so he lay in the dirt, stunned. He got up after a minute, staggering to the door of the shed, rubbing gravel-filled blood off his face. He saw Jerry's long legs carrying him across the yard toward the road.

Ahead of him ran the saboteur. There was a car waiting for him. Jerry didn't bother to go through the gate the way the bomb-thrower did. He jumped it. One more jump and he was on top his victim.

The car drove swiftly off. By the time Red got to the scene, the saboteur, a light skinned, beefy man with yellow hair, was out cold, with Jerry over him.

"Help me get 'im in the house," Jerry panted.

Jerry was bruised and battered, but he didn't let up until Sheriff Rawlins came. He listened to Jerry's story impassively, chewing his quid. "We'll find out about him if we have to call in the FBI," he promised.

They watched Rawlins departing with his prisoner, then washed up in the bathroom and daubed themselves with germicides. They went out to the shed. The entire quarter section of the ship which housed the instrument panel, a costly and complicated affair, was twisted unrecognizably. The tough metal casing of the gas-thrust motor was severely dented. Some girders had been blown from their rivets, and had swathed considerably destruction where they landed. The shed itself would have to be torn down.

They went glumly back into the house and put on the coffee.

Red said, "Must have been a Sustrian. They really are after us. We're getting to be big boys, Jerry. We've grown up."

"Grown up—and blown up." Jerry sat at the table, running his hands wearily through his dark hair. "Red—what's our bank balance show?"

Red knew that by heart. "Twelve thousand, six hundred dollars forty-seven cents."

"Not enough," said Jerry. "We'll never make it. We'll need ten thousand alone for repairs. And we still need seventy-five thou-

sand dollars worth of beryllium steel for the hull."

"Uh-huh," said Red, bringing the coffee, well-slopped as usual due to his fore-and-aft wobble. "Why should we pay seventy-five thousand?"

"Didn't we decide on beryllium steel, fathead?"

"Let's undecide. We're going to sell the ranch, Jerry, for whatever the market will bring, with a sixty-day evacuation clause. Then we're going to make the hull out of sheet iron, plated with tin."

Jerry threw back his head and laughing hootingly. "That's what they make tin-cans out of!"

"Sure. But it'll cost a hell of a lot less. And it'll do everything—"

"Except hold together'!" snarled Jerry.

The phone rang. Jerry got it. He listened for two seconds. Then he began yelling into the phone. Suddenly he held the receiver away from his ear, staring at it.

"The dirty so-and-so hung up on me!" he yelped. He smashed the phone down, circling around the room with his hands in his hair. "That does it," he groaned. "The saboteur escaped. Rawlins let him escape. I started to tell him off. He hung up." Then groggily he went back to his coffee, finally looked up at Red.

"Tin-plated sheet-iron," he said, and shuddered.

Red said nothing. He figured he had made his point. But then you had to know how to handle Jerry. He'd argue first; five minutes later he'd come around to your way of thinking.

TEXAS COWBOYS BUILD INTERPLANETARY TIN CAN

The page 5 headline, appearing in a hundred different newspapers, didn't bother Red. It did Jerry. He fumed. But then he also fumed when the sabotage story wasn't even mentioned, and when he found it impossible to see Rawlins.

"We'll have more than that to bother us," Red said. "They aren't through with us. What do you say we have a fence put up? It'll only be about a hundred dollars and it'll keep people out."

Jerry looked at him as if he were crazy, but the fence nonetheless went up. Behind it, the construction crew they brought in went at it night and day. Three weeks of activity saw the ship nearly completed. Red didn't feel too happy about his idea. The ship *did* look tinny.

"She does look a little bright," the loquacious construction boss said a bit warily.

"To hell with looks," snapped Jerry. "We're going to the Moon."

The construction boss spat. "If she don't lift," he said comfortingly, "you can always put a tent around her and charge a dime—"

Jerry handed him his welding torch and said, "Git!"

Four days before Pitero Mreno's

ship was due for the big take-off, a man named Llernson came to the gate, asking for Jerry. Jerry and Red went on the double. Llernson was Mreno's assistant.

"Ah—Semhor Hamilton?"

Jerry asked what he could do for Semhor Llernson?

The man, a tall, thin blond with light skin and ragged eyebrows, surveyed Jerry with mournful eyes.

"It is—" He coughed. "It is most interesting. *Very* interesting. I did not expect—that is, you two are scientists?"

"We're Boy Scouts," said Jerry, "with engineering degrees."

Llernson still surveyed them a bit critically from his sad eyes. "The—ah—the papers have not been kind to you, of course. Still, we know much that the papers do not. We know that you may have an excellent chance of landing on the Moon." He said with delicate impressiveness, "I have come all the way from Sustria to see you. The reason—Semhor Hamilton, we are *very* curious about your atomic gas-thrust motor."

Jerry lit a cigarette, said, "Years ago, when atomic power came out nobody knew how to convert it into a propelling force. The people who failed at the problem went back to chemical fuels. You Sustrians succeeded very well."

"Thank you," said Llernson.

"Mr. Guthrie and I worked from the atomic end. We figured that if the fission of U-235 produced barium and masyrium, then we could maybe change it into light gases, the inert gases preferably. Which is what we did. Only we don't use uranium any more. Ten pounds of lead will give us 50,000 cubic miles of helium gas. The lead disrupts in a chamber at a rate we can easily control. We developed a very special motor to handle it. The gas is released with explosive power—there you are. It's going to take us to the Moon, and what are you going to do about it?"

Llernson was still standing outside the gate, twirling his hat in his fingers. Red, soft-hearted as usual, was embarrassed. He let Jerry handle it.

Llernson coughed. "We were wondering what we could do about it. Ah—Semhor Hamilton, there is a good chance your craft will not land on the Moon, since it is not as—ah—spaceworthy as it should be."

"Agreed!"

"If it is not an insult!" Llernson gulped visibly. His eyes watered. "Gentlemen, I must be blunt. I must tell you—I must insist—that to Sustria must go the honor of the first space-flight!"

"I see. And how much were you going to offer us?"

Llernson's eyes brightened. He leaned forward tensely, shuttling his hat back and forth between his hands.

"A million dollars, Semhor?—a million dollars not to take your ship off the ground?"

Red knew what was coming. He grabbed Jerry's arm, holding him back. "Take it easy," he muttered sotto voce.

Jerry shook him off angrily. Then he lighted, verbally, into Llernson. He brought up the matter of the bomb that had been intended to kill him and Red and wreck the ship. He brought up every dirty trick that Sustria, directly or indirectly, had played on them.

"Now you expect us to accept a million dollar bribe to betray the United States—"

Llernson drew himself up. He said frigidly, "It is not a question of national honor, my hot-tempered inventor. It is a question—"

Jerry looked around distractedly. "Will somebody take care of him?" he inquired of the world at large. He went stalking off. Llernson looked after him angrily. Then he put his hat on top his head and stalked off toward his car.

Red stood at the gate, watching him go, something happening inside his stomach. He felt sick. There was something else—some other thing that Jerry and he did not understand. What?

And what would it mean if they did understand?

That thought made him sicker. He didn't want to think about it.

The construction boss, as he directed the welding of the last rivets into the tinny flanks of the *Lunar*, said calculatingly, "Maybe you should keep tomatoes in her."

"You're fired," said Jerry coldly.

The construction boss shrugged. "Why not? Job's done."

Red dismally reflected the ship appeared lopsided.

Jerry said, figuring, "Today's the seventh of September. Mreno takes off the ninth, 3:23:40 Greenwich time. Looks like we hit the deadline by finishing her up today."

"You speak truths like priceless jewels," murmured Red.

"She won't get off the ground," said the construction boss hopelessly.

"I thought we fired him," said Jerry. He went on. "Mreno clocks his time between take-off and landing about three minutes under twenty hours. His orbit is plotted. That's too bad for him. We don't have to conserve fuel. He does. We don't have to stick to any speed. We can get there under twenty hours. So we'll watch him take off over television and leave afterward."

"If the ship holds up," said Red. "And if they don't try something else."

"Or," said the construction boss walking off to gather up his men and getting in a final shot, "pickled pears."

The announcer's voice clear, excited, coming all the way from Sustria:

"3:21 Greenwich time. Only a few seconds remain before the Sustrian ship blasts away. The huge crowds you see down there

are becoming tense, quiet. Pitero Mreno stands in the airlock, a trim, military figure of a man. He is bowing, waving, smiling. You will note the grave, worried expression on his face. But who wouldn't be worried, getting into a sealed-in vehicle and blasting off for the Moon? Even a beautiful, streamlined job like that one?

"The air-lock has closed. They're getting ready. The seconds are going. THERE SHE GOES! WATCH IT SWEEP DOWN THE RUNWAY! THEY'RE OFF! A whizzing dot against blue sky, flashing away, smaller, smaller, smaller—"

Crowds stampeded, roared. The first space ship plunged toward the Moon. Red thoughtfully turned the set off, looked toward Jerry. His eyes said plainly that they'd better get going.

Jerry walked with eyes straight ahead. "So they've got a head start," he said, thin-lipped. "I didn't want their million dollars. But I did give them a head start. If we get there at all, Red, it won't be because we took an advantage."

Red walked stolidly.

A smattering of people was inside the fence, where Jerry had had one side knocked away to make room for the take-off. As they walked past, a laconic reporter from the *Austin Herald* said to a companion, lowly, but just loud enough, "They'll land on the Moon —if they get her up."

Red glanced at the man hard and walked past. They started toward the runway, on which some small children were playing follow-the-leader.

Red said, "Whew! What if we land on the *Mountains* of the Moon—Africa? We'd be laughed right off the planet—which is another way to get off Earth, at that. . . . Hey! Jerry!"

A police car had suddenly pulled up near the open section of fence. A half-dozen Deputy Sheriffs were piling from the car, running toward Jerry, Red, and the *Lunar*.

"Run for it!" Red yelled excitedly. But Jerry was already sprinting for the open airlock. Red lost ground. There would have been time to make it, however, but a small boy got in the way. Red and the child went down in a tangle. Red tasted alkali dust in his mouth. By the time he got to his feet, three of the sheriffs had hold of him. Red struggled, then felt his heart stop dead when Jerry reached the *Lunar* and clanged the airlock shut behind him.

He stopped struggling, his face screwed up unbelievingly. Jerry was leaving without him. Vaguely he heard the sheriffs yelling for Jerry to come out. Their voices were abruptly drowned out when the atomic gas-thrust kicked into action. Then came the blasting *whrrr* of helium gas shooting from the jets.

Numbly, he felt handcuffs clicking on his wrist.

His captor was talking to one of the other sheriffs. "Thing won't take off anyway, Joe. Sounds like

he's got the power on full. Crackpots."

Red swore softly to himself. A dream. The motor *was* working at maximum. He got sick. His eyes glazed over. A dream, five years work. His eyes glazed, the ship was hazing, shimmering. His arms and legs wavered. He fell, and that was that.

"Snap out of it, fellow trooper," said Jerry. "With my knowledge of Indian lore, I tracked you down. A bent twig here, the spore of a cigarette butt drifting. . . ."

"Shut up," said Red, rolling over and groggily sitting up. "Where are we?" But he knew. Through a water-transparent port were stars, cold, round little disks. The atomic gas-thrust was singing a steady song. The ship was vibrating gently. They were in open space.

"*How?*" said Red. "The last thing I knew—"

Jerry sat in the bucket seat behind the instrument panel, studied meters, gave the U-bar a turn. Then he grinned widely at Red.

"I asphyxiated everybody in the yard," he explained. "I put the gas-thrust on full—helium spurting from fore, aft, under, and auxiliary jets. The ship wouldn't move, naturally—but the helium shoved all the good air out of the area. Then I came out and got you."

Red got up slowly. He felt about half as good as he should be feeling. He sat down in a bolted chair, staring depressedly at the floor. Then he got up and looked out the port. There was the white Moon, etched against space. In another direction was Earth, certainly not more than a thousand miles below. Thrilling. Yeah.

"What's eating *you?*" Jerry suddenly said behind him.

"I don't know, Jerry—not exactly. I guess I'm thinking of Mreno. Or of Sustria. How many wars has Sustria been in in the last two hundred years? Got beat every time. Whipped bad. A thing like that could develop a national inferiority complex. Couldn't it?"

Jerry was silent for a long time while the ship plunged through space.

"Red," said Jerry gently, "Red, you may not know it but the *Lunar* will be the first space-ship to land on the Moon. Now do me a favor and whip up some coffee!"

The *Lunar* was perfect. It did not list. It developed no rattles. It developed no leaks. It landed on the Moon without even the most minor mishap. Tycho Crater dust rose around them; the gas-thrust drive was silent. They had landed an hour ahead of schedule.

Five minutes later, the catapult tossed a magnesium bomb beyond the ship. Two hundred yards away a hot, mushrooming glare signaled to Earth that the first space-ship had made a landing on the Moon. The two men watched it die away. Jerry lit a cigarette, staring at the glowing coal and the lazy smoke.

Suddenly Jerry lifted himself gently to his feet, and threw the cigarette in a shower of sparks to the metal deck. He stamped it.

"I don't care what you think," he yelled at Red. "But me—I—Jerry Hamilton—" He jammed his curved thumb hard against his chest. "I'm taking credit as one of the first two guys to land on the Moon! Jerry Hamilton is going down in the history books! Now shut up!"

"I didn't say anything," said Red dismally. And he didn't.

Pitero Mreno came on schedule, his sleek ship sinking out of midnight black fifty feet away. Jerry's face was set, bleak, hard. He dawdled with the audio hookup. Suddenly a voice roared out:

"Congratulations, my American friends!"

Jerry tuned the volume down. He said in clipped accents:

"In behalf of the United States, I congratulate the Sustrian government for being *second* to land on the Moon."

Red felt himself shrinking with embarrassment.

Silence from the Sustrian ship.

Then Mreno's voice, a deep, vibrating voice, came again, "Semhor Hamilton, it is not the triumph of the United States, it is the death of twenty-five million soldiers and civilians. I wish you could understand. I believe you do understand—"

Red was on his feet. Danger spots glowed on Jerry's face.

"Let him talk," Red whispered. "Maybe if we had listened to Llernson—"

Jerry shoved him away. "Sure, I understand," he yelped at Mreno. "Our tin can landed first. Your champagne bottle was a close second. Now we all understand. We're *first*. Don't you get that, Mreno?"

"Please—please let me speak," said Mreno.

Jerry breathed hard. Red had hold of his arm. "This is a historic moment, Jerry," he said. "You'll be sorry if you go off half-cocked."

Jerry closed his eyes as if praying to invisible gods. "Go ahead and speak, Mreno."

The lone voice of the Sustrian drifted across the crater.

"I shall give you two pictures. First, for hundreds of years Sustria has been a warrior nation. We have a fierce—perhaps an unfounded—pride of race. We bow to no one. We demand respect. We lost it through repeated failure.

"Today Sustria is a failure again, because of your American —ah—tin can. What will happen? I can read the future for you, Semhor. Sustria's passions will seek an outlet through war. There will be enforced treaties with the outlaw states. Mobilization. War with the United Nations of the World. A bloody war that will endure for years."

"So what?" said Jerry wearily. "For ten years you've been spoiling for war."

"I have related the first of two possible futures—if our ship does

not land on the Moon first."

Jerry jumped. "Wait a minute," he said rapidly. "You're getting way behind the ti—"

"Please Semhor. The second possibility, if our ship *does* land on the Moon first."

"But I just told you—" fumed Jerry.

Again Mreno's interruption was firm.

"Sustria, Semhors Hamilton and Guthrie, has been looking for a way to raise her head again. When—I beg your pardon, if—we return from the Moon with proof of a first landing, a state banquet will be given in my honor. The dignitaries and rulers of all the nations of the world will be there. There will be speeches of friendship. Our ruler will suggest —and the other nations will accept this as a *favor*—that we be given full membership in the United Nations of the World.

"In that organization, as you know, there is one army, one navy, one air fleet, one postal system, one currency system. There are no national or tariff boundaries. Nations become states in a central government.

"When Sustria *offers* to join, and is gladly accepted, as she would be, most of the terror in the world will have been removed."

Jerry's hands were shaking. "The glory and honor of the first Moon-flight belongs to the United States," he chattered.

"Your United States, Semhor Hamilton, wanted Sustria to win."

"Huh?" Jerry looked ashen.

"Yes. The newspapers treated you with ridicule. Banks were closed against you. The Federal government would not loan you money. The Patent Office attempted legal delays. A bomb was thrown. At the last moment, there was attempt to jail you on a false charge. For all that, your own government was responsible. That you won out over this, is a great tribute to your American persistence—but the United States did not wish you to win."

Jerry looked at Red as if somebody had walloped him with a blackjack. There were tears in his eyes. Red felt his own throat tightening up. He managed a smile.

"Look, Jerry," he said. "We're a couple miserable Texas cowboys. We built an interplanetary tin can. People made fun of us. They'll keep on making fun. They'll say, 'You boys tried, only you're still wet behind the ears. You didn't *really* expect to do what an excellently equipped ship like Mreno's did, now *did* you? We're sorry you boys had to crack up on the Moon, Mountains of the Moon, Africa—better luck next time!' "

Jerry raised one hand. "No, no," he groaned. "Not that. Make it a South American jungle, any place but the Mountains of the Moon. That would be too much."

"If you will do that—" said Mreno, his voice charged with

emotion. "It can be arranged—figures can be shown that we were able to land ahead of schedule. Your magnesium bomb will be ours—"

"Oh, blah!" yelled Jerry. "Good-bye!"

Angry tears were running down his cheeks. He switched off the audio, then swung viciously around to the instrument board.

The *Lunar* heaved herself up from the loamy floor of Tycho Crater, on her way to a rendezvous with a South American jungle.

Red watched the Moon recede. Big deal. They'd had had a chance to go down in the history books. Two great guys, stubborn, idealistic, a real tribute to the nation, who with their blah, blah, blah, blah. . . .

Red stood behind Jerry, gripping his shoulder hard.

"Fellow trooper," he said, "That's our good deed for today."

At first, it seems, interplanetary flight is going to be a big problem to the political world in which we live. How is politics going to handle the situations that arise when men begin to touch on other worlds?

There are some traditions along this line, of course. We have the example of the way America was settled, where each country claims the sections it has explored. That might work with the planets to a limited degree. Or the first nation on a planet may claim all of that planet. It hasn't been solved yet, and it won't be solved for a long time to come.

Probably there won't be interplanetary wars, considering the high costs involved. But it is possible that there will be Earth wars over which nation has a right to such-and-such a section on some fairly useless planet or other.

This can all be solved, given enough time and the chance that the world won't be blown up in any atomic war of the future.

But then, as men spread outward, politics and interplanetary or interstellar travel are going to have a rougher mix-up ahead of them. This time, it will be a question of how an interplanetary or interstellar race is going to handle politics.

For that, there is almost no precedent. Rome developed as a republic, and had to turn into an empire when she outgrew the limits of republican rule for her time. But even then, she had to fall. Once her boundaries became too far from the ruling center, and communication, supplies, etc., couldn't keep up with the expansion of the empire, it began to crumble.

America shows signs of stress due to size, already. There are 150 million people here. To give them all a semblance of democratic rule, even, requires that they must have representatives from each section of

only nominal size. This gives us almost too many representatives. There are some five hundred in the House of Representatives, not counting the Senate. Getting any kind of complete debate on any national issue in such a body becomes a major problem. The recent nominoting conventions showed the same difficulty.

In a small country, democracy is easy—everyone is pretty much interested in the same thing, and everyone knows the leaders available. Here, the South has one candidate, the West onother, The East has several, and the Middle-West has still others. At best, many of the delegates are only vaguely fomiliar with the men for whom they finally vote. And the people who decide the issue at the ballot know even less. In fact, the average person never knew who his delegate to the convention was, or who his Representative is, much less onything complete obout the man he mokes his President.

World government is a fine ideal, now. But nobody has been able to work out a system whereby all the various nations can be represented in any fair way. The big countries should hove more representotives than the small—but the small must not be squeezed out. And how can we hope to have any power, given equal representation, when India and China throw all their powers together?

Now try to expand that to cover a Congress of the Stars. We'll assume a faster-than-light drive, but even so, it will take weeks for the representatives to contact their people. This means that there is a definite lag. In addition, try to weld a group from Altair into accord with a group from Betelguese, after the two peoples have been apart, carrying on o separate culture for five or six generations.

Then figure that you will now be dealing with hundreds of men in such an Interstellar Congress, each representing Billions of people! It becomes unthinkably unwieldy.

Naturally, science fiction has turned to the ideo of an Empire to handle this. On the surface, it looks good—just as the Romans seemed to feel that the definite, immediote decision of on emperor would end the hassles of their republican Senate.

But history doesn't speak too well for onything like an Empire. They usually wind up with the governors so for divorced from the governed that the emperor is engaged in little more thon politics within his own castle, trying to put down the revolts that ore olways springing up. Also, you still hove thot timelog. And how do you enforce lows over distances of light-years, even if he tries to rule?

So far, it looks as if anorchy is the only answer. And thot, of course, is no answer ot all!

MAKE MINE MARS

BY CYRIL KORNBLUTH

ILLUSTRATED BY PAUL ORBAN

The life of an interstellar newscast operator on Frostbite wasn't what Spencer had expected. Yet he couldn't complain about it. After eleven stingers with a Sirian named Wenjtkpli, he couldn't kick about anything—at first!

"X is for the ecstacy she ga-a-ave me;
E is for her eyes—one, two, and three-ee;
T is for the teeth with which she'd sha-a-ave me;
S is for her scales of i-vo-ree-ee-ee . . ."

Somebody was singing, and my throbbing head objected. I seemed to have a mouthful of sawdust.

"T is for her tentacles ah-round me;
J is for her jowls—were none soo-oo fair;
H is for the happy day she found me;
Fe is for the iron in her hair . . ."

I ran my tongue around inside my mouth. It *was* full of sawdust —spruce and cedar, rocketed in from Earth.

"Put them all to-gether, they spell Xetstjhfe . . ."

My eyes snapped open, and I sat up, cracking my head on the underside of the table beneath which I was lying. I lay down and waited for the pinwheels to stop spinning. I tried to think it out. Spruce and cedar . . . Honest Blogri's Olde Earthe Saloon . . . eleven stingers with a Sirian named Wenjtkpli . . .

"A worrud that means the wur-r-l-l-d too-oo mee-ee-ee!"

Through the fading pinwheels I saw a long and horrid face, a Sirian face, peering at me with kindly interest under the table. It was Wenjtkpli.

"Good morning, little Earth chum," he said. "You feel not so tired now?"

"Morning?" I yelled, sitting up again and cracking my head again and lying down again to wait for the pinwheels to fade again.

"You sleep," I heard him say, "fourteen hours—so happy, so peaceful!"

"I gotta get out of here," I mumbled, scrambling about on the


J-K-B
ORBAN

imported sawdust for my hat. I found I was wearing it, and climbed out, stood up and leaned against the table, swaying and spitting out the last of the spruce and cedar.

"You like another stinger?" asked Wenjtkpli brightly. I retched feebly.

"Fourteen hours," I mumbled. "That makes it 0900 Mars now, or exactly ten hours past the time I was supposed to report for the nightside at the bureau."

"But last night you talk different," the Sirian told me in surprise. "You say many times how bureau chief McGillicuddy can take lousy job and jam—"

"That was last night," I moaned. "This is this morning."

"Relax, little Earth chum. I sing again song you taught me: *X is for the ecstasy she ga-a-ave me; E is for—"*

My throbbing head still objected. I flapped good-bye at him and set a course for the door of Blogri's joint. The quaint period mottoes—"QUAFFE YE NUT-BROWN AYLE" "DROPPE DEAD TWYCE" and so on—didn't look so quaint by the cold light of the Martian dawn.

An unpleasant little character, Venusian or something I'd seen around the place—oozed up to me. "Head hurt plenty, huh?" he simpered.

"This is no time for sympathy," I said. "Now one side or a flipper off—I gotta go to work."

"No sympathy," he said, his voice dropping to a whisper. He fumbled oddly in his belt, then showed me a little white capsule. "Clear your head, huh? Work like lightning, you bet!"

I was interested. "How much?"

"For you, friend, nothing. Because I hate seeing fellows suffer with big head."

"Beat it," I told him, and shoved past through the door. That pitch of his, with free sample, meant he was pushing J-K-B. I was in enough trouble without adding an unbreakable addiction to the stuff. If I'd taken his free sample, I would have been back to see him in 12 hours, sweating blood for more. And that time he would have named his own price.

I fell into an East-bound chair and fumbled a quarter into the slot. The thin, cold air of the pressure dome was clearing my head already. I was sorry for all the times I'd cussed a skinflint dome administration for not supplying a richer air mix or heating the outdoors more lavishly. I felt good enough to shave, and luckily had my razor in my wallet. By the time the chair was gliding past the building where Interstellar News had a floor, I had the whiskers off my jaw and most of the sawdust out of my hair.

The floater took me up to our floor while I tried not to think of what McGillicuddy would have to say.

The newsroom was full of noise

as usual. McGillicuddy was in the copydesk slot chewing his way through a pile of dispatches due to be filed on the pressure dome split for A.M. newscasts in four minutes by the big wall clock. He fed his copy, without looking, to an operator battering the keys of the old-fashioned radioteletype that was good enough to serve our local clients.

"Two minutes short!" he yelled at one of the men on the rim. "Gimme a brightener! Gimme a god-damned brightener!" The rim man raced to the receiving ether-types from Gammadion, Betelgeuse, and the other Interstellar bureaus. He yanked an item from one of the clicking machines and scaled it at McGillicuddy, who slashed at it with his pencil and passed it to the operator. The tape the operator was cutting started through the transmitter-distributor, and on all local clients' radioteletypes appeared: "FIFTEEN-MINUTE INTERSTELLAR NEWSCAST AM MARS PRESSURE DOMES." Everybody leaned back and lit up. McGillicuddy's eye fell on me, and I cleared my throat.

"Got a cold?" he asked genially.

"Nope. No cold."

"Touch of indigestion? Flu, maybe?" You're tardy today."

"I know it."

"Bright boy." He was smiling. That was bad.

"Spencer," he told me. "I thought long and hard about you. I thought about you when you failed to show up for the night-side. I thought about you intermittently through the night as I took your shift. Along about 0300 I decided what to do with you. It was as though Providence had taken a hand. It was as though I prayed 'Lord, what shall I do with a drunken, no-good son of a space-cook who ranks in my opinion with the boils of Job as an affliction to man?' Here's the answer, Spencer."

He tossed me a piece of ether-type paper, torn from one of our interstellar-circuit machines. On it was the following dialog:

ANYBODY TTHURE 'I MEAN THERE

THIS MARSBUO ISN GA PLS

WOT TTHUT I MEAN WOT THAT MEAN PLEASE

THIS IS THE MARS BUREAU OF INTERSTELLAR NEWS. WHO ARE YOU AND WHAT ARE YOU DOING HORSING AROUND ON OUR KRUEGER 60-B CIRCUIT TELETYPE QUESTIONMARK. WHERE IS REGULAR STAFFER. GO AHEAD

THATIS WOT I AM CALLING YOU ABBOUUT. KENNEDY DIED THIS MORNINGPNEUMONIA. I AM WEEMS EDITOR PHOENIX. U SENDING REPLLACEMENT KENNEDY PLEAS

THIS MCGILLICUDDY, MARSBUO ISN CHIEF. SENDING REPLACEMENT KENNEDY SOONEST. HAVE IDEAL MAN FOR JOB. END.

That was all. It was enough.

"Chief," I said to McGillicuddy. "Chief, you can't. You wouldn't—*would* you?"

"Better get packed," he told me, busily marking up copy. "Better take plenty of nice, warm clothing. I understand Krueger 60-B is about one thousand times dimmer than the sun. That's absolute magnitude, of course—Frostbite's in quite close. A primitive community, I'm told. Kennedy didn't like it. But of course the poor old duffer wasn't good enough to handle anything swifter than a one-man bureau on a one-planet split. Better take *lots* of warm clothing."

"I quit," I said.

"Sam," said somebody, in a voice that always makes me turn to custard inside.

"Hello, Ellie," I said. "I was just telling Mr. McGillicuddy that he isn't going to shoot me off to Frostbite to rot."

"Freeze," corrected McGillicuddy with relish. "Freeze. Good morning, Miss Masters. Did you want to say a few parting words to your friend?"

"I do," she told him, and drew me aside to no-man's-land where the ladies of the press prepared strange copy for the gentler sex. "Don't quit, Sam," she said in that voice. "I could never love a quitter. What if it *is* a minor assignment?"

"Minor," I said. "What a gem of understatement *that* is!"

"It'll be good for you," she insisted. "You can show him what you've got on the ball. You'll be on your own except for the regular dispatches to the main circuit and your local split. You could dig up all sorts of cute feature stories that'd get your name known." And so on. It was partly her logic, partly that voice and partly her promise to kiss me good-bye at the port.

"I'll take it," I told McGillicuddy. He looked up with a pleased smile and murmured: "The power of prayer . . ."

The good-bye kiss from Ellie was the only thing about the journey that wasn't nightmarish. ISN's expense account stuck me on a rusty bucket that I shared with glamorous freight like yak kids and tenpenny nails. The little yaks blatted whenever we went into overdrive to break through the speed of light. The Greenhough effect—known to readers of the science features as "supertime"—scared hell out of them. On ordinary rocket drive, they just groaned and whimpered to each other the yak equivalent of "Thibet was never like this!"

The Frostbite spaceport wasn't like the South Pole, but it was like Greenland. There was a bunch of farmers waiting for their yaks, beating their mittened hands together and exhaling long plumes of vapor. The collector of customs, a rat-faced city boy, didn't have the decency to turn them

over and let the hayseeds get back to the administration building. I watched through a porthole and saw him stalling and dawdling over a sheaf of papers for each of the farmers. Oddly enough, the stalling and dawdling stopped as soon as the farmers caught on and passed over a few dollars. Nobody even bothered to slip it shamefacedly from one hand to another. They just handed it over, not caring who saw—rat-face sneering, the farmers dumbly accepting the racket.

My turn came. Rat-Face came aboard and we were introduced by the chief engineer. "Harya," he said. "Twenny bucks."

"What for?"

"Landing permit. Later at the administration you can pay your visitor's permit. That's twenny bucks too."

"I'm not a visitor. I'm coming here to work."

"Work, schmurk. So you'll need a work permit—twenny bucks." His eyes wandered. "Whaddaya got there?"

"Ethertype parts. May need them for replacements."

He was on his knees in front of the box, crooning, "Triple ad valorem plus twenny dollars security bond for each part plus twenny dollars inspection fee plus twenny dollars for decontamination plus twenny dollars for failure to declare plus—"

"Break it up, Joe," said a new arrival—a grey-mustached little man, lost in his parka. "He's a friend of mine. Extend the courtesies of the port."

Rat-Face—Joe—didn't like it, but he took it. He muttered about doing his duty, and gave me a card.

"Twenny bucks?" I asked, studying it.

"Nah," he said angrily. "You're free-loading." He got out.

"Looks as if you saved ISN some money," I said to the little man. He threw back the hood of his parka in the relative warmth of the ship.

"Why not? We'll be working together. I'm Chenery from the *Phoenix*."

"Oh, yeah—the client."

"That's right," he agreed, grinning. "*The* client. What exactly did you do to get banished to Frostbite?"

Since there was probably a spacemail aboard from McGillicuddy telling him exactly what I did, I told him. "Chief thought I was generally shiftless."

"You'll do here," he said. "It's a shiftless, easy-going kind of place. I have the key to your bureau. Want me to lead the way?"

"What about my baggage?"

"Your stuff's safe. Port officers won't loot it when they know you're a friend of the *Phoenix*."

That wasn't exactly what I'd meant; I'd always taken it for granted that port officers didn't loot anybody's baggage, no matter whose friends they were or weren't. As Chenery had said, it seemed to be a shiftless, easy-go-

ing place. I let him lead the way; he had a jeep waiting to take us to the administration building, a musty, too-tight hodgepodge of desks. A lot of them were vacant, and the dowdy women and fattish men at the others didn't seem to be very busy. The women were doing their nails or reading; the men mostly were playing blotto with pocket-size dials for small change. A couple were sleeping.

From the administration building a jet job took us the 20 kilos to town. Frostbite, the capitol of Frostbite, housed maybe 40,000 people. No pressure dome. Just the glorious outdoors, complete with dust, weather, insects, and a steady, icy wind. Hick towns seem to be the same the universe over. There was a main street called Main Street, with clothing shops and restaurants, gambling houses and more or less fancy saloons, a couple of vaudeville theaters and dance halls. At the unfashionable end of Main Street were some farm implement shops, places to buy surveying instruments and geologic detectors and the building that housed the Interstellar News Service Frostbite Bureau. It was a couple of front rooms on the second floor, with a mechanical dentist below, an osteopath above, and a "ride-up-and-save" parka emporium to the rear.

Chenery let me in, and it was easy to see at once why Kennedy had died of pneumonia. Bottles. The air conditioning must have carried away every last sniff of liquor, but it still seemed to me that I could smell the rancid, home-brew stuff he'd been drinking. They were everywhere, the relics of a shameless, hopeless alcoholic who'd been good for nothing better than Frostbite. Sticky glasses and bottles everywhere told the story.

I slid open the hatch of the incinerator and started tossing down bottles and glasses from the copy desk, the morgue, the ethertype. Chenery helped, and decently kept his mouth shut. When we'd got the place kind of cleaned up I wanted to know what the daily routine was like.

Chenery shrugged. "Anything you make it, I guess. I used to push Kennedy to get more low-temperature agriculture stories for us. And those yaks that landed with you started as a civic-betterment stunt the *Phoenix* ran. It was all tractors until our farm editor had a brainstorm and brought in a pair. It's a hell of a good idea—you can't get milk, butter and meat out of a tractor besides work. Kennedy helped us get advice from some Earthside agronomy station to set it up and helped get clearance for the first pair too. I don't have much idea of what copy he filed back to ISN. Frankly, we used him mostly as a contact man."

I asked miserably: "What the hell kind of copy *can* you file from a hole like this?" He laughed and

cheerfully agreed that things were pretty slow.

"Here's today's *Phoenix*," he said, as the faxer began to hum. A neat, 16-page tabloid, stapled, pushed its way out in a couple of seconds. I flipped through it and asked: "No color at *all?*"

Chenery gave me a wink. "What the subscribers and advertisers don't know won't hurt them. Sometimes we break down and give them a page-one color pic."

I studied the *Phoenix*. Very conservative layout—naturally. It's competition that leads to circus makeup, and the *Phoenix* was the only sheet on the planet. The number-one story under a modest two-column head was an ISN farm piece on fertilizers for high-altitude agriculture, virtually unedited. The number-two story was an ISN piece on the current United Planets assembly.

"Is Frostbite in the UP, by the way?" I asked.

"No. It's the big political question here. The *Phoenix* is against applying. We figure the planet can't afford the assessment in the first place, and if it could there wouldn't be anything to gain by joining."

"Um." I studied the ISN piece closer and saw that the *Phoenix* was very much opposed indeed. The paper had doctored our story plenty. I hadn't seen the original, but ISN is—in fact and according to its charter—impartial as it's humanly possible to be. But our story, as it emerged in the *Phoenix*, consisted of: a paragraph about an undignified, wrangling debate over the Mars-excavation question; a fistfight between a Titanian and an Earth delegate in a corridor; a Sirian's red hot denunciation of the UP as a power-politics instrument of the old planets; and a report of UP administrative expenses—without a corresponding report of achievements.

"I suppose," I supposed, "that the majority of the planet is stringing along with the *Phoenix?*"

"Eight to one, the last time a plebiscite was run off," said Chenery proudly.

"You amaze me." I went on through the paper. It was about 70 per cent ads, most of them from the Main Street stores we'd passed. The editorial page had an anti-UP cartoon showing the secretary-general of the UP as the greasy, affable conductor of a jet-bus jammed to the roof with passengers. A sign on the bus said "Fare, $15,000,000 and up per year." A road sign pointing in the direction the bus was heading said, "To Nowhere." The conductor was saying to a small, worried-looking man in a parka labeled "New Agricultural Planets" that, "There's always room for one more!!" The outline said: "But is there—and is it worth it?"

The top editorial was a glowing tribute from the *Phoenix* to the *Phoenix* for its pioneering work in yaks, pinned on the shipment that arrived today. The second editorial

was anti-UP, echoing the cartoon and quoting from the Sirian in the page one ISN piece.

It was a good, efficient job of the kind that turns a working newsman's stomach while he admires the technique.

"Well, what do you think of it?" asked Chenery proudly.

I was saved from answering by a *brrp* from the ethertype.

"GPM FRB GA PLS" it said. "Good-afternoon, Frostbite Bureau—go ahead, please." What with? I hunted around and found a typed schedule on the wall that Kennedy had evidently once drawn up in a spasm of activity.

"MIN PLS" I punched out on the ethertype, and studied the sked.

It was quite a document.

WEEKDAYS

0900-1030: BREAKFAST
1030-1100: PHONE WEEMS FOR BITCHES RE SVS
1100-1200 NOTE MARSBUO RE BITCHES
1200-1330: LUNCH
1330-1530: RUN DROPS TO WEEMS: GAB WITH CHENERY
1530-1700: CLIP PHOENIX, REWRITE PUNCH & FILE

SUNDAYS

0900-1700: WRITE AND FILE ENTERPRISERS.

Chenery spared my blushes by looking out the window as I read the awful thing. I hadn't quite realized how low I'd sunk until then.

"Think it's funny?" I asked him —unfairly, I knew. He was being decent. It was decent of him not to spit in my eye and shove me off the sidewalk for that matter. I had hit bottom.

He didn't answer. He was embarrassed, and in the damn-fool way people have of finding a scapegoat I tried to make him feel worse. Maybe if I rubbed it in real hard he'd begin to feel almost as bad as I did. "I see," I told him, "that I've wasted a morning. Do you or Weems have any bitches for me to messenger-boy to Mars?"

"Nothing special," he said. "The way I said, we always like low-temperature and high-altitude agriculture stuff. And good farm-and-home material."

"You'll get it," I told him. "And now I see I'm behind in clipping and rewriting and filing stories from your paper."

"Don't take it so hard," he said unhappily. "It's not such a bad place. I'll have them take your personal stuff to the Hamilton House and the bureau stuff here. It's the only decent hotel in town except the *Phoenix* and that's kind of high—" He saw that I didn't like him jumping to such accurate conclusions about my pay check and beat it with an apologetic grimace of a smile.

The ethertype went *brrp* again and said "GB FRB CU LTR" "Good-bye, Frostbite. See you later." There must have been many days when old Kennedy was too sick or too sick at heart to rewrite pieces from the lone client. Then the machine began beating out news items which I'd tear off eventually and run over to the *Phoenix*.

"Okay, sweetheart," I told the clattering printer. "You'll get copy from Frostbite. You'll get copy that'll make the whole damned ISN sit up and take notice—" and I went on kidding myself in that vein for a couple of minutes but it went dry very soon.

Good God, but they've got me! I thought. If I'm no good on the job they'll keep me here because there's nothing lower. And if I'm good on the job they'll keep me here because I'm good at it. Not a chance in a trillion to *do* anything that'll get noticed—just plain stuck on a crummy planet with a crummy political machine that'll never make news in a million years!

I yanked down Kennedy's library—"YOUR FUTURE ON FROSTBITE," which was a C. of C. recruiting pamphlet, "MANUAL OF ETHERTYPE MAINTENANCE AND REPAIR," an ISN house handbook and "THE UNITED PLANETS ORGANIZATION SECRETARIAT COMMITTEE INTERIM REPORT ON HABIT-FORMING DRUGS IN INTERPLANETARY COMMERCE," a grey-backed UP monograph that got to Frostbite God knew how. Maybe Kennedy had planned to switch from home brew to something that would kill him quicker.

The Chamber of Commerce job gave a thumbnail sketch of my new home. Frostbite had been colonized about five generations ago for the usual reason. Somebody had smelled money. A trading company planted a power reactor—still going strong—at the South Pole in exchange for choice tracts of land which they'd sold off to homesteaders, all from Earth and Earth-colonized planets. In fine print the pamphlet gave lip service to the UP ideal of interspecific brotherhood, *but*— So Frostbite, in typical hick fashion, thought only genus homo was good enough for its sacred soil and that all non-human species were more or less alarming monsters.

I looked at that editorial-page cartoon in the *Phoenix* again and really noticed this time that there were Sirians, Venusians, Martians, Lyrans, and other non-human beings jammed into the jetbus, and that they were made to look sinister. On my first glance, I'd taken them in casually, the way you would on Earth or Mars or Vega's Quembrill, but here they were supposed to scare me stiff and I was supposed to go around saying, "Now, don't get me wrong, some of my best friends are Martians, *but*—"

Back to the pamphlet. The trad-

ing company suddenly dropped out of the chronology. By reading between the lines I could figure out that it was one of the outfits which had over-extended itself planting colonies so it could have a monopoly hauling to and from the new centers. A lot of them had gone smash when the Greenhough Effect took interstellar flight out of the exclusive hands of the supergiant corporations and put it in the reach of medium-sized operators like the rusty-bucket line that had hauled in me, the yaks and the tenpenny nails.

In a constitutional convention two generations back the colonists had set up a world government of the standard type, with a president, a unicameral house and a three-step hierarchy of courts. They'd adopted the United Planets model code of laws except for the bill of rights—to keep the slimy extra-terrestials out—with no thanks to the U. P.

And that was it, except for the paen of praise to the independent farmer, the backbone of his planet, beholden to no man, etc.

I pawed through the ethertype handbook. The introduction told me that the perfection of instantaneous transmission had opened the farthest planets to the Interstellar News Service, which I knew; that it was knitting the colonized universe together with bonds of understanding, which I doubted; and that it was a boon to all human and non-human intelligences, which I thought was a barefaced lie. The rest of it was "see Fig. 76 3b," "Wire 944 will slip easily through orifice 459j," "if Knob 545 still refuses to turn, take Wrench 31 and gently, without forcing—" Nothing I couldn't handle.

The ethertype was beating out:

FARM—NOTE FROSTBITE NOME, ALASKA, EARTH—ISN —HOUSEWIVES OF THE COLDER FARM PLANETS WOULD DO WELL TO TAKE A LEAF FROM THE BOOK OF THE PRIMITIVE AMERINDIAN SEAMSTRESS. SO SAYS PROFESSOR OF DOMESTIC SCIENCE MADGE MCGUINESS OF THE UNIVERSITY OF NOME'S SCHOOL OF LOW-TEMPERATURE AGRONOMY. THE INDIAN MAID BY SEWING LONG, NARROW STRIPS OF FUR AND BASKET-WEAVING THEM INTO A BLANKET TURNED OUT COVERINGS WITH TWICE THE WARMTH AND HALF THE WEIGHT OF FUR ROBES SIMPLY SEWED EDGE TO EDGE—

That was my darling, with her incurable weakness for quote leads and the unspeakable "so says." Ellie Masters, I thought, you're a lousy writer but I love you and I'd like to wring your neck for helping McGillicuddy con me into this. "Dig up all sorts of cute feature stories," you told me and you made it sound sensible. Better I

should be under the table at Blogri's with a hangover and sawdust in my hair than writing little by-liners about seventeen tasty recipes for yak manure, which is all that's ever going to come out of this God-forsaken planet.

Rat-Face barged in without knocking; a moronic-looking boy was with him toting the box of ethertype spare parts.

"Just set it anywhere," I said. "Thanks for getting it right over here. Uh, Joe, isn't it?—Joe, where could I get me a parka like that? I like those lines. Real mink?"

It was the one way to his heart. "You betcha. Only plaid mink lining on Frostbite. Ya notice the lapels? Look!" He turned them forward and showed me useless little hidden pockets with zippers that looked like gold.

"I can see you're a man with taste."

"Yeah. Not like some of these bums. If a man's Collector of the Port he's got a position to live up to. Look, I hope ya didn't get me wrong there at the field. Nobody told me you were coming. If you're right with the *Phoenix* you're right with the Organization. If you're right with the Organization, you're right with Joe Downing. I'm regular."

He said that last word the way a new bishop might say: "I am consecrated."

"Glad to hear that. Joe, when could I get a chance to meet some of the other regular Boys?"

"Ya wanna get In, huh?" he asked shrewdly. "There's been guys here a lot longer than you, Spencer."

"In, Out," I shrugged. "I want to play it smart. It won't do me any harm."

He barked with laughter. "Not a bit," he said. "Old man Kennedy didn't see it that way. You'll get along here. Keep ya nose clean and we'll see about The Boys." He beckoned the loutish porter and left me to my musings.

That little rat had killed his man, I thought—but where, why, and for whom?

I went out into the little corridor and walked into the "ride up and save" parka emporium that shared the second floor with me. Leon Portwanger, said the sign on the door. He was a fat old man sitting cross-legged, peering through bulging shell-rimmed glasses at his needle as it flashed through fur.

"Mr. Portwanger? I'm the new ISN man, Sam Spencer."

"So?" he grunted, not looking up.

"I guess you knew Kennedy pretty well."

"Never. Never."

"But he was right in front there—"

"Never," grunted the old man. He stuck himself with the needle, swore, and put his finger in his mouth. "Now see what you made me do?" he said angrily and indistinctly around the finger. "You

shouldn't bother me when I'm working. Can't you see when a man's working?"

"I'm sorry," I said, and went back into the newsroom. A man as old as Leon, tailoring as long as Leon, didn't stick himself. He didn't even wear a thimble—the forefinger was calloused enough to be a thimble itself. He didn't stick himself unless he was very, very excited—or unless he wanted to get rid of somebody. I began to wish I hadn't fired those bottles of Kennedy's home brew down to the incinerator so quickly.

At that point I began a thorough shakedown of the bureau. I found memos torn from the machine concerning overfiling or failure to file, clippings from the *Phoenix*, laundry lists, style memos from ISN, paid bills, blacksheets of letters to Marsbuo requesting a transfer to practically anywhere but Frostbite, a list of phone numbers and a nasty spacemailed memo from McGillicuddy.

It said: "Re worldshaker, wll blv whn see. Meanwhile sggst keep closer sked avoid wastage costly wiretime. Reminder guppy's firstest job offhead orchidbitches three which bypassed u yestermonth. How? McG"

It was typical of McGillicuddy to memo in cablese. Since news bureaus began—as "wire services"; see his archaic "wiretime"—their executives have been memoing underlings in cablese as part of the "one of the working press Jones boys" act that they affect. They also type badly so they can slash up their memo with copyreader symbols. This McGillicuddy did too, of course. The cablese, the bad typing, and the copyreading made it just about unintelligible to an outsider.

To me it said that McGillicuddy doubted Kennedy's promise to file a worldshaking story, that he was sore about Kennedy missing his scheduled times for filing on the ethertype, and that he was plenty sore about Kennedy failing to intercept complaints from the client *Phoenix* three of which McGillicuddy had been bothered by during the last month.

So old Kennedy had dreamed of filing a worldshaker. I dug further into the bureau files and the desk drawers, finding only an out of date "WHO'S WHO IN THE GALAXY." No notes, no plans, no lists of interviewees, no tipsters—no blacksheet, I realized, of the letter to which McGillicuddy's cutting memo was a reply.

God only knew what it all meant. I was hungry, sleepy and sick at heart. I looked up the number of the Hamilton House and found that helpful little Chenery had got me a reservation and that my luggage had arrived from the field. I headed for a square meal and my first night in bed for a week without yaks blatting at me through a thin bulkhead.

It wasn't hard to fit in. Frost-

bite was a swell place to lose your ambition and acquire a permanent thirst. The sardonic sked posted on the bureau wall—I had been planning to tear it down for a month, but the inclination became weaker and weaker. It was so true to life.

I would wake up at the Hamilton House, have a skimpy breakfast and get down to the bureau. Then there'd be a phone conversation with Weems during which he'd nag me for more and better Frostbite-slant stories. In an hour of "wiretime" I'd check in with Marsbuo. At first I risked trying to sneak a chat with Ellie, but the jokers around Marsbuo cured me of that. One of them pretended he was Ellie on the other end of the wire and before I caught on had me believing that she was six months pregnant with a child by McGillicuddy and was going to kill herself for betraying me. Good, clean fun, and after that I stuck to spacemail for my happy talk.

After lunch, at the Hamilton House, or, more often, in a tavern, I'd tear up the copy from the printer into neat sheets and deliver them to the *Phoenix* building on the better end of Main Street. (If anything big had come up, I would have phoned them to hold the front page open. If not, local items filled it and ISN copy padded out the rest of their sheet.) As in Kennedy's sked, I gabbed with Chenery or watched the compositors or proof pullers or transmittermen at work, and then went back to the office to clip my copy rolling out of the faxer. On a good day I'd get four or five items—maybe a human interester about a yak mothering an orphaned baby goat, a new wrinkle on barn insulation with native materials that the other cold-farming planets we served could use, a municipal election or a murder trial verdict to be filed just for the record.

Evenings I spent at a tavern talking and sopping up home brew, or at one of the two-a-day vaudeville houses, or at the Clubhouse. I once worked on the Philadelphia *Bulletin,* so the political setup was nothing new to me. After Joe Downing decided I wouldn't get pushy, he took me around to meet The Boys.

The Clubhouse was across the street from the three-story capitol building of Frostbite's World Government. It was a little bigger than the capitol and in much better repair. Officially it was the headquarters of the Frostbite Benevolent Society, a charitable, hence tax-free, organization. Actually it was the headquarters of the Frostbite Planetary Party, a standard gang of brigands. Down on the wrong end of Main Street somewhere was an upper room where the Frostbite Interplanetary Party, made up of liberals, screwballs, and disgruntled ex-members of the Organization but actually run by stooges of that Organization, hung out.

The Boys observed an orderly

rotation of officers based on seniority. If you got in at the age of 18, didn't bolt and didn't drop dead you'd be president some day. To the party you had to bring loyalty, hard work—not on your payroll job, naturally, but on your electioneering—and cash. You kept bringing cash all your life; salary kickbacks, graft kickbacks, contributions for gold dinner services, tickets to testimonial banquets, campaign chest assignments, widows' and orphans' fund contributions, burial insurance, and dues, dues, dues.

As usual, it was hard to learn who was who. The President of Frostbite was a simple-minded old boy named Witherspoon, so far gone in senile decay that he had come to believe the testimonial-banquet platitudes he uttered. You could check him off as a wheelhorse. He was serving the second and last year of his second and last term, and there was a mild battle going on between his Vice-President and the Speaker of the House as to who would succeed him. It was a traditional battle and didn't mean much; whoever lost would be next in line. When one of the contestants was so old or ill that he might not live to claim his term if he lost, the scrap would be waived in a spirit of good sportsmanship that the voters would probably admire if they ever heard of it.

Joe Downing was a comer. His sponsorship of me meant more than the friendship of Witherspoon would have. He was Chenery's ally; they were the leadership of the younger, sportier element. Chenery's boss Weems was with the older crowd that ate more, talked more, and drank less.

I had to join a committee before I heard of George, though. That's the way those things work.

It was a special committee for organizing a testimonial banquet for Witherspoon on his 40th year in the party. I wound up in the subcommittee to determine a testimonial gift for the old buffer. I knew damned well that we'd be expected to start the subscription for the gift rolling, so I suggested a handsome—and—inexpensive—illuminated scroll with a sentiment lettered on it. The others were scandalized. One fat old woman called me "cheap" and a fat male payroller came close to accusing me of irregularity, at which I was supposed to tremble and withdraw my suggestion. I stood on my rights, and wrote a minority report standing up for the scroll while the majority of the subcommittee agreed on an inscribed sterling tea service.

At the next full committee meeting we delivered our reports and I thought it would come to a vote right away. But it seemed they weren't used to there being two opinions about anything. They were flustered, and the secretary slipped out with both reports during a five-minute adjournment. He came back and told me, beaming, "Chenery says George liked your

idea." The committee was re-convened and because George liked my idea my report was adopted and I was appointed a subcommittee of one to procure the scroll.

I didn't learn any more about George after the meeting except that some people who liked me were glad I'd been favorably noticed and others were envious about the triumph of the Johnny-come-lately.

I asked Chenery in the bar. He laughed at my ignorance and said, "George *Parsons.*"

"Publisher of the *Phoenix?* I thought he was an absentee owner."

"He doesn't spend a lot of time on Frostbite. At least I don't think he does. As a matter of fact, I don't know a lot about his comings and goings. Maybe Weems does."

"He swings a lot of weight in the organization."

Chenery looked puzzled. "I guess he does at that. Every once in a while he does speak up and you generally do what he says. It's the paper, I suppose. He could wreck any of the boys." Chenery wasn't being irregular: newsmen are always in a special position.

I went back to the office and, late as it was, sent a note to desk to get the one man subcommittee job cleaned up:

ATTN MCGILLICUDDY RE CLIENT RELATIONS NEED SOONEST ILLUMINATED SCROLL PRESENT HOMER WITHERSPOON PRESIDENT FROSTBITE HONORING HIM 40 YEARS MEMBERSHIP FROSTBITE PLANETARY PARTY USUAL SENTIMENTS NOTE MUST BE TERRESTIAL STYLE ART IF NOT ACTUAL WORK EARTHER ACCOUNT ANTIBEM PREJUDICE HERE FRBBUO END.

That happened on one of those Sundays which, according to Kennedy's sardonic sked, was to be devoted to writing and filing enterprisers.

The scroll came through with a memo from McGillicuddy: "Fyi ckng w/ clnt etif this gag wll hv ur hide. Reminder guppy's firstest job offheading orchidbitches one which bypassed u yesterweek. How? McG"

There was a sadly sweet letter from Ellie aboard the same rust-bucket. She wanted me to come back to her, but not a broken man. She wanted me to do something really big on Frostbite to show what I had in me. She was sure that if I really looked there'd be something more to file than the copy I'd been sending in. Yeah.

Well, the big news that week would be the arrival of a loaded immigrant ship from Thetis of Procyon, a planet whose ecology had been wrecked beyond repair in a few short generations by D.D.T., hydraulic mining, unrestricted logging, introduction of rabbits and house cats and the use of poison bait to kill var-

mints. In a few thousand years maybe the planet would have topsoil, cover crops, forests, and a balanced animal population again, but Thetis as of now was a ruin whose population was streaming away to whatever havens it could find.

Frostbite had agreed to take 500 couples provided they were of terrestial descent and could pass a means test—that is, provided they had money to be fleeced of. They were arriving on a bottom called *Esmeralda*. According to my year-old "LLOYDS' SHIPPING INDEX"—"exclusive accurate and up to date, being the result of daily advices from every part of the galaxy"—*Esmeralda* was owned by the Frimstedt Atomic Astrogation Company, Gammadion, gross tonnage 830,000, net tonnage 800,000, class GX—"freighter/steerage passengers"—insurance rating: hull A, atomics A. The tonnage difference meant real room for only about 850. If she took the full 1,000 she'd be jammed. She was due to arrive at Frostbite in the very early morning. Normally I would have kept a death watch, but the AA rating lulled me and I went to the Hamilton House to sleep.

At 4:30, the bedside phone chimed. "This Willie Egan," a frightened voice said. "You remember—on the desk at the *Phoenix*." Desk, hell—he was a 17-year-old copy boy I'd tipped to alert me on any hot breaks.

"There's some kind of trouble with the *Esmeralda*," he said. "That big immigrant ship. They had a welcoming committee out but the ship's overdue. I thought there might be a story in it. You got my home address? You better send the check there. Mr. Weems doesn't like us to do string work. How much do I get?"

"Depends," I said, waking up abruptly. "Thanks, kid." I was into my clothes and down the street in five minutes. It looked good; mighty good.

The ship was overcrowded, the AA insurance rating I had was a year old—maybe it had gone to pot since then and we'd have a major disaster on our hands.

I snapped on the newsroom lights and grabbed the desk phone, knocked down one toggle on the key box and demanded: "Space operator! Space operator!"

"Yes sir. Let me have your call, please?"

"Gimme the bridge of the *Esmeralda* due to dock at the Frostbite spaceport today. While you're setting up the call gimme interplanetary and break in when you get the *Esmeralda*."

"Yes, sir." Click-click-click.

"Interplanetary operator."

"Gimme Planet Gammadion. Person-to-person, to the public relations officer of the Frimstedt Atomic Astrogation Company. No, I don't know his name. No, I *don't* know the Gammadion routing. While you're setting up the call

gimme the local operator and break in when you get my party."

"Yes, sir." Click-click-click.

"Your call, please."

"Person-to-person, captain of the spaceport."

"Yes, sir."

Click-click-click. "Here is *Esmeralda*, sir."

"Who's calling?" yelled a voice. "This is the pursers office, who's calling?"

"Interstellar News, Frostbite Bureau. What's up about the ship being late?"

"I can't talk now! Oh, my God! I can't talk now! They're going crazy in the steerage—" He hung up and I swore a little.

"Space operator!" I yelled. "Get me *Esmeralda* again—if you can't get the bridge get the radio shack, the captain's cabin, anything inboard!"

"Yes, sir."

Click-click-click. "Here is your party, sir."

"Captain of the port's office," said the phone.

"This is Interstellar News. What's up about *Esmeralda*? I just talked to the purser in space and there's some trouble aboard."

"I don't know anything more about it than you boys," said the captain of the port. But his voice didn't sound right.

"How about those safety-standard stories?" I fired into the dark.

"That's a tomfool rumor!" he exploded. "Her atomics are perfectly safe!"

"Still," I told him, fishing, "it *was* an engineer's report—"

"Eh? What was? I don't know what you're talking about." He realized he'd been had. "Other ships have been an hour late before and there are always rumors about shipping. That's absolutely all I have to say—absolutely all!" He hung up.

Click-click-click. "Interplanetary operator. I am trying to place your call, sir." She must be too excited to plug in the right hole on her switchboard. A Frostbite Gammadion call probably cost more than her annual salary, and it was a gamble at that on the feeble and mysteriously erratic subradiation that carried voices across segments of the galaxy.

But there came a faint harumph from the phone. "This is Captain Gulbransen. Who is calling, please?"

I yelled into the phone respectfully: "Captain Gulbransen, this is Interstellar News Service on Frostbite." I knew the way conservative shipping companies have of putting ancient, irritable astrogators into public-relations berths after they are ripe to retire from space. "I was wondering, sir," I shouted, "if you'd care to comment on the fact that *Esmeralda* is overdue at Frostbite with 1,000 immigrants."

"Young man," wheezed Gulbransen dimly, "it is clearly stated in our tariffs filed with the I.C.C. that all times of arrival are to be

read as plus or minus eight Terrestial Hours, and that the company assumes no liability in such cases as—"

"Excuse me, sir, but I'm aware that the eight-hour leeway is traditional. But isn't it a fact that the average voyage hits, the E.T.A. plus or minus only fifteen minutes T.H.?"

"That's so, but—"

"Please excuse me once more, sir—I'd like to ask just one more question. There is, of course, no reason for alarm in the lateness of *Esmeralda*, but wouldn't you consider a ship as much as one hour overdue as possibly in danger? And wouldn't the situation be rather alarming?"

"Well, one full hour, perhaps you would. Yes, I suppose so—but the eight-hour leeway, you understand—" I laid the phone down quietly on the desk and ripped through the *Phoenix* for yesterday. In the business section it said "*Esmeralda* due 0330." And the big clock on the wall said 0458.

I hung up the phone and sprinted for the ethertype, with the successive stories clear in my head, ready to be punched and fired off to Marsbuo for relay on the galactic trunk. I would beat out 15 clanging bells on the printer and follow them with

INTERSTELLAR FLASH
IMMIGRANT SHIP ESMERALDA SCHEDULED TO LAND FROSTBITE WITH 1,000 FROM THETIS PROCYON ONE AND ONE HALF HOURS OVERDUE: OWNER ADMITS SITUATION "ALARMING," CRAFT "IN DANGER."

And immediately after that a five-bell bulletin:

INTERSTELLAR BULLETIN
FROSTBITE — THE IMMIGRANT SHIP ESMERALDA, DUE TODAY AT FROSTBITE FROM THETIS PROCYON WITH 1,000 STEERAGE PASSENGERS ABOARD IS ONE AND ONE-HALF HOURS OVERDUE. A SPOKESMAN FOR THE OWNERS, THE FRIMSTEDT ATOMIC ASTROGATION COMPANY, SAID SUCH A SITUATION IS "ALARMING" AND THAT THE CRAFT MIGHT BE CONSIDERED "IN DANGER." ESMERALDA IS AN 830 THOUSAND-TON FREIGHTER-STEERAGE PASSENGER CARRIER.

THE CAPTAIN OF THE PORT AT FROSTBITE ADMITTED THAT THERE HAVE BEEN RUMORS CIRCULATING ABOUT THE CONDITION OF THE CRAFT'S ATOMICS THOUGH THESE WERE RATED "A" ONE YEAR AGO.

THE PURSER OF THE SPACESHIP, CONTACTED IN SPACE, WAS AGITATED AND INCOHERENT WHEN QUESTIONED. HE SAID—

"Get up, Spencer, get away from the machine."

It was Joe Downing, with a gun in his hand.

"I've got a story to file," I said blankly.

"Some other time." He stepped closer to the ethertype and let out a satisfied grunt when he saw the paper was clean. "Port captain called me," he said. "Told me you were nosing around."

"Will you get out of here?" I asked, stupefied. "Man, I've flash and bulletin matter to clear. Let me alone!"

"I said to get away from that machine or I'll cut ya down, boy."

"But why? *Why?*"

"George don't want any big stories out of Frostbite."

"You're crazy. Mr. Parsons is a newsman himself. Put that damn-fool gun away and let me get this out!"

I turned to the printer when a new voice said, "No! Don't do it, Mr. Spencer. He is a Nietzschean. He'll kill you, all right. He'll kill you, all right."

It was Leon Portwanger, the furrier, my neighbor, the man who claimed he never knew Kennedy. His fat, sagging face, his drooping white mustache, his sad black eyes enormous behind the bulls-eye spectacles were very matter-of-fact. He meant what he said. I got up and backed away from the ethertype.

"I don't understand it," I told them.

"You don't have to understand it," said the rat-faced collector of the port. "All you have to understand is that George don't like it." He fired one bullet through the printer and I let out a yelp. I'd felt that bullet going right through me.

"Don't," the steady voice of the furrier cautioned. I hadn't realized that I was walking toward Downing and that his gun was now on my middle. I stopped.

"That's better," said Downing. He kicked the phone connection box off the baseboard, wires snapping and trailing. "Now go to the Hamilton House and stay there for a couple of days."

I couldn't get it through my head. "But *Esmeralda's* a cinch to blow up," I told him. "It'll be a major space disaster. *Half of them are women!* I've got to get it out!"

"I'll take him back to his hotel, Mr. Downing," said Portwanger. He took my arm in his flabby old hand and led me out while that beautiful flash and bulletin and the first lead disaster and the new lead disaster went running through my head to a futile obbligato of: "They can't *do* this to me!" But they did it.

Somebody gave me a drink at the hotel and I got sick and a couple of bellboys helped me to bed. The next thing I knew I was feeling very clear-headed and wakeful and Chenery was hovering over me looking worried.

"You've been out cold for forty-eight hours," he said. "You had a high fever, chills, the works. What happened to you and Downing?"

"How's *Esmeralda?*" I demanded.

"Huh? Exploded about half a million miles off. The atomics went."

"Did anybody get it to ISN for me?"

"Couldn't. Interplanetary phones are out again. You seem to have got the last clear call through to Gammadion. And you put a bullet through your ethertype—"

"*I* did? Like hell—Downing did!"

"Oh? Well, that makes better sense. The fact is, Downing's dead. He went crazy with that gun of his and Chief Selig shot him. But old Portwanger said you broke the ethertype when you got the gun away from Downing for a minute —no, that doesn't make sense. What's the old guy up to?"

"I don't give a damn. You see my pants anywhere? I want to get that printer fixed."

He helped me dress. I was a little weak on my pins and he insisted on pouring expensive egg nog into me before he'd let me go to the bureau.

Downing hadn't done much of a job, or maybe you can't do much of a job on an ethertype without running it through an induction furnace. Everything comes apart, everything's replaceable. With a lot of thumbing through the handbook I had all the busted bits and pieces out and new ones in. The adjustment was harder, needing two pairs of eyes. Chenery watched the meters while I turned the screws. In about four hours I was ready to call. I punched out:

NOTE MARSBUO ISN. FRBBUO RESTORED TO SVC AFTR MECHNCL TRBL ETILLNESS.

The machine spat back:

NOTE FRBBUO. HW ILLNSS COINCDE WTH MJR DISSTR YR TRRTRY? FYI GAMMADION BUO ISN OUTRCHD FR ESMERALDA AFTR YR INXPLCBL SLNCE ETWS BDLY BTN GAMMADION BUOS COMPTSHN. MCG END

He didn't want to hear any more about it. I could see him stalking away from the printer to the copydesk slot to chew his way viciously through wordage for the major splits. I wished I could see in my mind's eye Ellie slipping over to the Krueger 60-B circuit sending printer and punching out a word or two of kindness—the machine stirred again. It said: "JOE JOE HOW COULD YOU? ELLIE"

Oh, God.

"Leave me alone, will you?" I asked Chenery.

"Sure—sure. Anything you say," he humored me, and slipped out.

I sat for a while at the desk, noticing that the smashed phone connection had been installed again, that the place had been policed up.

Leon Portwanger came waddling in with a bottle in his hand. "I have here some prune brandy," he said.

Things began to clear up. "*You* gave me that mickey," I said slowly. "And you've been lying about

me. You said I wrecked the ethertype."

"You are a determinist and I was trying to save your life," he said, setting down two glasses and filling them. "Take your choice and I will have the other. No mickeys." I picked one and gulped it down—nasty, too-sweet stuff that tasted like plum peelings. He sipped his and seemed to enjoy it.

"I thought," he said, "that you were in with their gang. What *was* I to think? They got rid of poor Kennedy. Pneumonia! You too would have pneumonia if they drenched you with water and put you on the roof in your underwear overnight. The bottles were planted here. He used to drink a little with me, he used to get drunk now and then—so did I—nothing bad."

"You thought I was in their gang," I said. "What gang are you in?"

"The Frostbite Interplanetary Party," he said wryly. "I would smile with you if the joke were not on me. I know, I know—we are Outs who want to be Ins, we are neurotic youngsters, we are led by stooges of the Planetary Party. So what should I do—start a one-man party alone on a mountaintop, so pure that I must blackball everybody except myself from membership? I am an incorrigible reformer and idealist whether I like it or not—and sometimes, I assure you, I don't like it very well.

"Kennedy was no reformer and idealist. He was a pragmatist, a good man who wanted a good news story that would incidentally blow the present administration up. He used me, I used him. He got his story and they killed him and burglarized the bureau to remove all traces of it. Or did they?"

"I don't know," I muttered. "Why did you dope me? Did Downing really go crazy?"

"I poisoned you a little because Downing did *not* go crazy. Downing was under orders to keep you from sending out that story. Probably after he had got you away from the ethertype he would have killed you if I had not poisoned you with some of my heart medicine. They realized while you were ill and feverish that it might as well be one as another. If they killed you, there would only be another newsman sent out to be inveigled into their gang. If they killed Downing, they could blame everything on him, you would never be able to have anything more than suspicions, and—there are a lot more Downings available, are there not?"

My brain began to click. "So your mysterious 'they' didn't want a top-drawer story to center around Frostbite. If it did, there'd be follow-ups, more reporters, ICC people investigating the explosion. Since the news break came from Gammadion, that's where the reporters would head and that's where the ICC investigation would be based. But what have they got to hide? The

political setup here smells to high heaven, but it's no worse than on fifty other planets. Graft, liquor, vice, drugs, gambling—"

"No drugs," said the furrier.

"That's silly," I told him. "Of course, they have drugs. With everything else, why not drugs?"

He shrugged apologetically. "Excuse me," he said. "I told you I was a reformer and an idealist. I did not mention that I used to be an occasional user of narcotics. A little something to take the pressure off—those very small morphine sulphate tablets. You can imagine my horror when I emigrated to this planet twenty-eight years ago and found that there were no drugs—literally. Believe me when I tell you that I—*looked hard. Now,* of course, I am grateful. But I had a few very difficult weeks." He shuddered, finished his prune brandy and filled both our glasses again.

He tossed down his glass.

"Damn it all!" he exploded. "Must I rub your nose in it? Are you going to figure it out for yourself? And are you going to get killed like my poor friend, Kennedy? Look here! And here!" He lurched to his feet and yanked down "WHO'S WHO IN THE GALAXY" and the United Planets Drug Committee Report.

His pudgy finger pointed to:

"PARSONS, George Warmerdam, organic chemist, newsppr pubr, b. Gammadion 172, s. Henry and Dolores (Warmerdam) P., studied Gammadion Chem. Inst. B.Ch 191, M.Ch 193, D.Ch 194: empl. dir research Hawley Mfg. Co. (Gammadion) 194-198; founded Parsons Chem Mfg Labs (Gammadion) 198, headed same 198-203; removed Frostbite 203; founded newspaper Frostbite *Phoenix* 203. Author, tech papers organ chem 193-196. Mem Univ Organ Chem Soc. Address c/o Frostbite *Phoenix,* Frostbite."

And in the other book:

"—particular difficulty encountered with the stupefiant known as 'J-K-B.' It was first reported on Gammadion in the year 197, when a few isolated cases presented themselves for medical treatment. The problem rapidly worsened through the year 203, by which time the drug was in widespread illicit interplanetary commerce. The years 203-204 saw a cutting-off of the supply of J-K-B for reasons unknown. Prices soared to fantastic levels, unnumbered robberies and murders were committed by addicts to obtain possession of the minute quantities remaining on the market, and other addicts, by the hundreds of thousands presented themselves to the authorities hoping more or less in vain for a 'cure.' J-K-B appeared again in the year 205, not confined to any segment of the inhabited galaxy. Supplies have since remained at a constant level—enough to brutalize, torment, and shorten the lives of the several

score million terrestial and extra-terrestial beings who have come into its grip. Interrogation of peddlars intercepted with J-K-B has so far only led back through a seemingly endless chain of middlemen. The nature of the drug is such that it cannot be analyzed and synthesized—"

My head spun over the damning parallel trails. Where Parsons tried his wings in chemistry, J-K-B appeared. When he went on his own, the quantity increased. When he moved to another planet, the supply was cut off. When he was established, the supply grew to a constant level and stayed there.

And what could be sweeter than a thoroughly corrupt planet to take over with his money and his newspaper? Dominate a machine and the members' "regularity" will lead them to kill for you—or to kill killers if need be. Encourage planetary ignorance and isolationism; keep the planet unattractive and depressed by letting your freebooters run wild—that'll discourage intelligent immigration. Let token parties in, fleece them fast and close, let them spread the word that Frostbite's no place for anybody with brains.

"A reformer and idealist I am," said Portwanger calmly. "Not a man of action. What should be done next?"

I thought it over and told him; "If it kills me, and it might, I am going to send a rash of flashes and bulletins from this Godforsaken planet. My love life depends on it. Leon, do you know anybody on Mars?"

"A Sirian fellow named Wenjtkpli—a philosophical anarchist. An unreal position to take. This is the world we are in, there are certain social leverages to apply. Who is he to say—?"

I held up my hand. "I know him too." I could taste that eleventh stinger again; by comparison the prune brandy was mellow. I took a gulp. "Do you think you could go to Mars without getting bumped off?"

"A man could try."

The next two weeks were agonizing. Those Assyrian commissars or Russian belshazzars or whatever they were who walked down prison corridors waiting to be shot in the back of the head never went through what I did. I walked down the corridor for fourteen days.

First Leon got off all right on a bucket of bolts. I had no guarantee that he wouldn't be plugged by a crew member who was in on the party. Then there was a period of waiting for the first note that I'd swap you for a mad tarantula.

It came:

NOTE FRBBUO HOW HELL XPCT KP CLNT IF UNABL DROP COPY? MCG MARSBUO.

I'd paved the way for that one by drinking myself into a hangover on homebrew and lying in bed and groaning when I should have been delivering the printer

copy to the *Phoenix*. I'd been insulting as possible to Weems to insure that he'd phone a squawk to McGillicuddy—I hoped. The tipoff was "hell." Profanity was never, ever used on our circuits—I hoped. "Hell" meant "Portwanger contacted me, I got the story, I am notifying United Planets Patrol in utmost secrecy."

Two days later came:

NOTE FRBBUO BD CHMN WNTS KNO WHT KIND DAM KNUCKLHED FILING ONLY FOURFIVE ITMS DAILY FM XPNSVE ONEMAN BUO. XPCT UPSTEP PRDCTN IMMY, RPT IMMY MCG MARSBUO.

"Damn" meant "Patrol contacted, preparing to raid Frostbite." "Fourfive" meant "fourfive"—days from message.

The next note would have got ISN in trouble with the Interplanetary Communications Commission if it hadn't been in a good cause. I'm unable to quote it. But it came as I was in the bureau about to leave for the Honorable Homer Witherspoon's testimonial banquet. I locked the door, took off my parka and rolled up my sleeves. I was going to sweat for the next few hours.

When I heard the multiple roar of the Patrol ships on rockets I very calmly beat out fifteen bells and sent:

INTERSTELLAR FLASH

UNITED PLANETS PATROL DESCENDING ON FROSTBITE, KRUEGER 60-B'S ONLY PLANET, IN UNPRECEDENTED MASS RAID ON TIP OF INTERSTELLAR NEWS SERVICE THAT WORLD IS SOLE SOURCE OF DEADLY DRUG J-K-B.

INTERSTELLAR BULLETIN

THE MASSED PATROL OF THE UNITED PLANETS ORGANIZATION DESCENDED ON THE ONLY PLANET OF KRUEGER 60-B, FROSTBITE, IN AN UNPRECEDENTED MASS RAID THIS EVENING. ON INFORMATION FURNISHED BY INTERSTELLAR NEWS REPORTER JOE SPENCER THE PATROL HOPES TO WIPE OUT THE SOURCE OF THE DEADLY DRUG J-K-B, WHICH HAS PLAGUED THE GALAXY FOR 20 YEARS. THE CHEMICAL GENIUS SUSPECTED OF INVENTING AND PRODUCING THE DRUG IS GEORGE PARSONS, RESPECTED PUBLISHER OF FROSTBITE'S ONLY NEWSPAPER.

INTERSTELLAR FLASH

FIRST UNITED PLANETS PATROL SHIP LANDS IN FROSTBITE CAPITOL CITY OF PLANET.

INTERSTELLAR FLASH

PATROL COMMANDER PHONES EXCLUSIVE INTERVIEW TO INTERSTELLAR NEWS SERVICE FROSTBITE BUREAU REPORTING ROUNDUP OF PLANETARY GOVERN-

MENT LEADERS AT TESTIMONIAL DINNER

(WITH FROSTBITE)

FROSTBITE — ISN — ONE INTERSTELLAR NEWS REPORTER HAS ALREADY GIVEN HIS LIFE IN THE CAMPAIGN TO EXPOSE THE MAKER OF J-K-B. ED KENNEDY, ISN BUREAU CHIEF, WAS ASSASSINATED BY AGENTS OF DRUGMAKER GEORGE PARSONS THREE MONTHS AGO. AGENTS OF PARSONS STRIPPED KENNEDY AND EXPOSED HIM OVERNIGHT TO THE BITTER COLD OF THIS PLANET, CAUSING HIS DEATH BY PNEUMONIA. A SECOND INTERSTELLAR NEWS SERVICE REPORTER, JOE SPENCER, NARROWLY ESCAPED DEATH AT THE HANDS OF A DRUG-RING MEMBER WHO SOUGHT TO PREVENT HIM FROM SENDING NEWS OVER THE CIRCUITS OF THE INTERSTELLAR NEWS SERVICE.

INTERSTELLAR FLASH
PATROL SEIZES PARSONS

INTERSTELLAR BULLETIN

FROSTBITE — IN A TELEPHONE MESSAGE TO INTERSTELLAR NEWS SERVICE A PATROL SPOKESMAN SAID GEORGE PARSONS HAD BEEN TAKEN INTO CUSTODY AND UNMISTAKABLY IDENTIFIED. PARSONS HAD BEEN LIVING A LIE ON FROSTBITE, USING THE NAME CHENERY AND THE GUISE OF A COLUMNIST FOR PARSONS' NEWSPAPER. SAID THE PATROL SPOKESMAN;—"IT IS A TYPICAL MANEUVER. WE NEVER GOT SO FAR ALONG THE CHAIN OF J-K-B PEDDLERS THAT WE NEVER FOUND ONE MORE. APPARENTLY THE SOURCE OF THE DRUG HIMSELF THOUGHT HE COULD PUT HIMSELF OUT OF THE REACH OF INTERPLANETARY JUSTICE BY ASSUMING A FICTITIOUS PERSONALITY. HOWEVER, WE HAVE ABSOLUTELY IDENTIFIED HIM AND EXPECT A CONFESSION WITHIN THE HOUR. PARSONS APPEARS TO BE A J-K-B ADDICT HIMSELF.

INTERSTELLAR FLASH
PARSONS CONFESSES

(FIRST LEAD FROSTBITE)

FROSTBITE — ISN — THE UNITED PLANETS PATROL AND THE INTERSTELLAR NEWS SERVICE JOINED HANDS TODAY IN TRIUMPH AFTER WIPING OUT THE MOST VICIOUS NEST OF DRUGMAKERS IN THE GALAXY. J-K-B, THE INFAMOUS NARCOTIC WHICH HAS MENACED—

I ground out nearly thirty thousand words of copy that night.

Bleary-eyed at the end of the run, I could barely read a note that came across:

NOTE FRBBUO: WELL DONE. RETURN MARS IMMY: SNDNG REPLCEMNT. MARS-BUO MCG.

The Patrol flagship took me back in a quick, smooth trip with lots of service and no yaks.

After a smooth landing I took an Eastbound chair from the field and whistled as the floater lifted me to the ISN floor. The newsroom was quiet for a change and the boys and girls stood up for me.

McGillicuddy stepped out from the copy table slot to say: "Welcome back. Frankly, I didn't think you had it in you, but you proved me wrong. You're a credit to the profession and the ISN." Portwanger was there, too. "A pragmatist, your McGillicuddy," he muttered. "But you did a good job."

I didn't pay very much attention; my eyes were roving over no man's land. Finally I asked McGillicuddy: "Where's Miss Masters? Day off?"

"How do you like that?" laughed McGillicuddy. "I forgot to tell you. She's your replacement on Frostbite. Fired her off yesterday. I thought the woman's angle—where do you think *you're* going?"

"Honest Blogri's Olde Earthe Saloon," I told him with dignity. "If you want me, I'll be under the third table from the left as you come in. With sawdust in my hair."

Drugs are almost as old as man—at least as old as his history. In fact, it sometimes seems that man's whole object in developing a civilization was to increase the number of "filthy habits" he could enjoy.

Alcohol is probably the oldest. So far as is known, all primitive peoples indulged in it. Tobacco is a fairly recent addition to man's group of vices—if it is a vice—but it has developed into one of the biggest businesses in the world. And, of course, tea and coffee supply caffeine in generous doses, without which half the world would be unable to go to work the morning after they've rested up from their caffeine-stimulated work of the day before.

There are drugs to keep you awake, and drugs to put you to sleep. There are drugs to quiet your nerves after you've drugged yourself up on alcohol. There are drugs to kill the pain that is a warning to you that something is wrong; and there are drugs to induce sensations that are wrong when everything is going all right—such as hasheesh or marijuana, both of which destroy our touch with reality. And there is the whole group of alkaloids belonging to the opium family, though most of us have sense enough to let them alone.

Chances are, though, that if people call you a dope, they're only telling the truth!

The Robots Are Coming

BY F. M. TURNER

Scientists, it seems have a way of catching up with science fiction. First the otom wos split, then they begon sending rockets out of the otmosphere. Now, as this article points out, they're starting on robots

The difference between pseudo-science and science-fiction consists of twenty years. That's about the length of time it seems to toke for science to stop smiling at an idea in fiction and to start admitting it's good extrapolation.

In 1932, during the depression which could never happen, the three struggling magozines thot provided "escape" literature to those who thought the future had ony promise were filled chiefy with four impossibilities. Rockets played a dominant role, and everyone knew that about all you could really do with o rocket was to moke fireworks. A few men in Germany ond a couple elsewhere were attacking the problem, but getting a rocket up even one mile was an omozing performance. Science scoffed at stories using Moonships by 1975.

Today, a leading nationol magazine let a panel of experts take up fifteen pages to demonstrate how near and proctical the orbital station and the Moonrocket are. In fact, it's only in a couple of science fiction magazines that the possibility of interplanetary flight is seriously doubted!

Atomic power was the penultimate gadget of those 1932 stories. Sometimes, perhaps in the year 2200, men would learn how to crock open the otom. Scientists again smiled at the idea—not completely impossible, but still wildly visionary. They had discovered the neutron by then, but it didn't meon o thing as far os power was concerned. Today, some of them wish they had been right, becouse the atom cracked with a mildly terrific bang a few years ago.

And finally, there were robots and time travel. We hastily skip over the latter! Let thot wait another twenty years. But what about those robots? Obviously, they were impossible. Someone figured out once that it would take most of Manhattan Islond to hold enough relays to make it work. By 1932, of course, they had vacuum tubes, so they cut the estimate down to the size of the Empire State Building.

Today, in a world where the depression can never happen again, we're still sneering at robots. They're interesting science-fiction ideas, but strictly for the wild imagination. Your bockyard experts can give you a hundred reasons why they won't work. But the scientist who is studying fields related to robotics (with thanks for the term to Dr. Asimov) isn't so sure. Robots by the year 2200? Why wait that long?

The robots are coming. There isn't much doubt of that.

This means a genuine science-fiction robot, not a mere calculating machine. It's hard to define just what it will be. But we'll use the term to mean a creature of mechanical design, capable of duplicating and extending nearly oll types of human thinking. It probably won't look like a man, and it may not even be able to move around. But it would have to be able to carry on an intelligent conversation with a man, contributing its own views rather than merely feeding out canned lines. It might not be able to speak colloquial English, but it could be educated enough to do original research, occeptoble orticles, or correlate information from a hundred different fields, weed out the useless, evaluate the useful, and save men innumerable duplications of effort.

It should also be smoll enough to be put into a vehicle of some sort, so that it would be shipped down to the surfoce of another planet to conduct a thorough investigation where men couldn't live.

Anything which can safely fill those requirements should certainly be considered a true robot, rather than a mere "thinking machine," such as the calculoting machines of today. Whether it had a consciousness of self would be something nobody could answer—but it would act as if it did!

And if you insist that it would need a man-like body to be a real science-fiction robot, even thot con be arranged. All the basic work has been done, today! In twenty years, science has moved from the position of agreeing vaguely that it was probably not totally impossible to a belief that it's entirely possible.

There is even a good reason for building such a machine. The fact that science is becoming more ond more specialized is part of the answer. A means of rapidly correlating all fields of science and feeding in all current developments would probably compress the next ten years of progress into one, right today. And that situation is bound to grow worse as time goes on. The robot could earn his keep, even if he costs as much as the two billion dollars we spent for the atomic bomb.

Cost is of no importance, anyhow. The world is currently struggling for a new balance of power with science playing a major role. Given plans for a robot which would be able to handle all branches of

technology, no government could afford not to build it—no matter what the cost. And there's no theoretical limit to the amount such a robot could learn and use, which isn't true of men.

Finally, the modern world has given still another valid reason for building a robot of such abilities. Security has entered the picture. Science has been compartmented, since few men can be wholly trusted. Instead of greater correlation, we have greater division. With Bozo at hand, all data could be fed to him, and the compartmented work could still be directed in such a way that it would achieve the effect of free intercommunication. Today, a biologist isn't going to know what is going on in a nuclear physics laboratory, even though some by-product of nuclear research might save him years. Bozo could feed him the necessary dope, without ruining security, as a rule.

Let's see what we've developed, starting with the exterior and working inwards. There's not much problem to building a humanoid body, of course. Modern alloys and plastics would even keep it fairly light. Mechanically we have part of him already.

The mechanical hands (waldos) used to serve as extensions of the hands of operators, who must stand outside an atomic pile but work within it, are already here. They can and do duplicate the functions of arms and hands, when given directions. The same principle could apply to legs, as well. The development of the selsyn motor has pretty well solved the intricate problem of coupling small control impulses into large, strong movements. Two of these gadgets work together, so that any movement of one (however gently applied) is transferred *exactly* to the other (however powerful it must be). We can already give Bozo mechanical muscles that will respond to his small "nerve" impulses, and do so accurately.

We'll have to power him with batteries, if he's to be man-sized. This isn't too good, but it isn't impossible; he won't be good for great physical feats or long hours, but he probably could walk around inside an atomic furnace, where he could do some valuable research.

His mind won't wander, though, even when his body does. At our best present guess, his brain will be largely contained in a much bigger space, and kept immobile; he'll only have enough of it within his body to send back signals to the main brain by microwaves. But as an advantage to this, he can probably have dozens of bodies wandering around within transmission range, if we want to build him that way.

He's still going to have a large brain, obviously. But not the size of a skyscraper! Those figures of 1932 were sound enough, for

the time. In those days, a radio tube was something about four inches in over-all height, and one and a half in diameter, drawing nearly two watts of power at the minimum. They reduced that soon after to a mere two inches of height and half inch diameter, with a drain of something under a quarter of a watt. Then the hearing aids had to grow smaller, and the subminiature tubes cut the size and power-drain again. Other components also began to shrink when the war began to demand smaller, more compact design.

And then electronics reached all the way back to the past to come up with the old crystal it had thrown away. It added a third contact, and had the transistor (plus a complicated theoretical structure that would practically need Bozo to understand it). Today, this is a handy little device about the size of the head of a match, drawing power which is measured in thousandths of a watt!

In fact, the current drain is so small that there's a good chance that the simple off-on action of a transistor for our purpose could be powered by built-in, permanent batteries. You may have used one of the record brushes which has a bit of radioactive material to give it a permanent electric charge—a surplus of electrons. Such an electron emitting radioactive material is already being used for some experimental work as a low-drain "permanent" battery!

Bozo has undergone a head-shrinking. He's now installed in only one room of that skyscraper.

We've developed devices that taste, feel, hear, and smell. We have scanning tubes that change light into electrical impulses in orderly fashion, just as we would need for our eyes; television has even added color to Bozo's sight, from infra-red to ultra-violet. The vocoder can break words down into a sensible electric code for him. And the voder can give him speech.

All that's left to do is to give him sense, as well as senses. And that, of course, is the problem. Science fiction has solved it in a host of ways. It has used bits of human brain tissue (that's cheating, boys), gobbledegook, and positronic sponge platinum brains, whatever they are. But all it could honestly do was to avoid the problem. Science was not ready for it, until very recently.

A very crude and limited sort of "thinking" has been possible to machines for a long time. It wasn't hard to teach machinery to add, subtract, and do normal arithmetical work. Even the handling of calculus, algebra, and other higher mathematics was possible. The world has learned to build better and better abacuses. But these machines had to have all their thinking built in. No matter how long they worked, they never learned by experience. Most of them were

nothing but super-fast, super-complicated counting machines. You fed in a string of dots which kept piling up until you finished. Then they told you how many dots had gone through. The more complicated ones could do some of the feeding operations for themselves—if you told them how many times to feed in seventeen dots, they did it for you. If you asked them to multiply six apples by seven cents, they told you the answer was forty-two, but they didn't care whether it was forty-two cents or forty-two apples.

Incidentally, just why should six apples times seven cents equal forty-two cents? It seems no more sensible than dividing six apples by seven hungry boys to get no apples, four fights, two black eyes, six satisfied boys and one hungry boy. But how would you devise a machine to handle the latter type of calculating?

The relationships between human thinking and mechanical or electronic processes was a vague, cloudy neverland. The psychologists were frequently denying the existence of such a relationship. And the semanticists were only trying to get a better means of coping with the human thinking habits and bring them a little closer to some congruence with the universe in which men lived—of relating the symbol and the thing properly and divorcing the grammatical operation from the observed operation.

Philosophy generally was engrossed in the sudden "discovery" that the old Aristotelian idea that a thing either is or is not was "not entirely" true. Unfortunately, that simply muddied up the waters. As John W. Campbell, Jr., recently pointed out in an editorial in *Astounding Science Fiction*, the universe around us has a habit of operating on a definite off-on basis. The "not entirely" comes in only when you have to take the statistical result of a number of offs and ons. The human brain is built of millions of units which work on "conduct" or "no conduct" methods, with no graduation between.

Eventually, science began applying the same idea to the mechanical brains. Arithmetic can work on the binary system—and that only requires a relay, electron tube, or transistor to assume one of two states: on or off. You can count, using three such relays, from zero to seven (000, 001, 010, 011, 100, 101, 110, 111) just as well as wwith regular numbers. You man multiply 010 by 011 to get 110 just as well as 2 by 3 to get 6. Science had fallen back on the simplification nature achieved unknown eons ago.

But there were other developments, some new, some old but polished up to take over the new job. A long time ago, a machine was invented to handle syllogisms. Given the major premise *All dogs*

eat meat, and a minor premise *Pete eats no meat,* it could test the conclusion, and report that *Pete is not a dog* was valid. Unfortunately, the machines could come croppers by reporting that because *No cat has nine tails* and *One cat has one more tail than no cat,* it was valid to say that *One cat has ten tails.*

The fault was with the method of breaking down the information, not with the machines. *No* can mean different things—*zero, not any, negative.* Men have learned to operate with such a system, but we shouldn't have to develop machines to do that. What we need is a better method of statement—one which would let us leave out all the needless complexities.

Such a method already existed, but wasn't being applied generally. Boolean algebra was developed in the nineteenth century, and has since been improved and simplified. Basically, it works by assigning definite symbols to the essential elements of statements, and then operating those symbols according to certain rules. It is nothing but sound reasoning, divorced from the arbitrary pitfalls of vague words and the operating rules which depend on grammar instead of usefulness.

Recently, it has been dusted off and used extensively for the analysis and design of circuitry. It's a double-jointed step forward: it enables much clearer statements to be given to a thinking machine, about even the most complicated situation, thus simplifying the machine; and it enables the designer to determine what is necessary and will work when building the machine.

Speech has been receiving a lot of attention in other quarters, also, since the communication engineers found some of their work leading into a deeper investigation of it. Some of their methods seem almost like playing games. They've tried such things as going down a page and building sentences by picking up the first word which could follow the last two words already written, for example. Surprisingly, some amazingly sensible "information" can be gleaned in this way.

We think our speech is dictated purely by our ideas. But it begins to look as if there may be simple rules behind all our palaver which the grammarians have completely overlooked. Again, the problem of what constitutes communication, or information, has received more attention—badly needed attention.

English was developed in a world without clear values and without much knowledge of cause-and-effect relationships—where similarity between sounds often blurred two meanings into one symbol and where the meanings interacted to cause further confusion. Words sometimes

completely distort ideas. *The exception proves the rule,* says the layman happily, as he makes a mistake out of pure carelessness. The word *proves* meant *tests,* originally, and the idea was that an exception tests the rule—making it invalid; exactly the opposite meaning is given to it today.

Now, through the various attacks on the problem, ways of putting information into more exact packages and of manipulating symbols correctly are emerging. With clear symbols and clear operating rules, we have a language which is similar to the mathematics that the "thinking machines" already handle. Bozo can begin to work with statements that cover all experience, instead of a limited area of scientific knowledge.

Incidentally, we may be building the cornerstone for a language for ourselves which will cut our difficulty in learning to a fraction of what it is and will make clear thought a rule instead of an exception. Men who begin working with Bozo, speaking his language, are probably going to start using that language among themselves instead of English.

Another development is cybernetics—basically, the scientific study of all machines with some measure of self-control. This is a new science, and one which gives promise of explaining how our own minds work. It has opened a path to follow in determining the functions of our brains—and what functions must be built into Bozo. It breaks thinking down into a smaller number of factors than was previously supposed, stripping away still more needless complexity.

Bozo is shrinking to small size again. He's discarding all the things that were once necessary, but are now nothing but reflections of outwarn theories. Instead of semi-mystic operations, he's becoming something within the reach of our understanding. We can begin to design him, tentatively, already.

The necessary mechanical devices are ready for our use. In the good old days of 1932, many of them lay around, too. But they were crude and clumsy, not yet perfected.

Memory is a simple affair. The human brain apparently stores up information by some alteration in a cell or molecule. Bozo can do this in a number of ways. He can alter the magnetic state of a grain of iron on a piece of tape. (A tape recorder does this, of course.) He can punch information on a card, or print it in a pattern of black and white squares that can be scanned by a beam of light. Or he can impress it on a tube, known as the *selectron,* which can hold several hundred bits of information.

His capacity to learn and remember will be limited only by the number of circuits installed and the amount of tape, cards, or whatever he

uses for his memory. A scanning beam can pick out hundreds of thousands of pieces of information from a single card, and he can have as many cards and scanners as are needed.

If he wants to pull something out and hold it in his memory temporarily, he can impress it as a traveling "shock wave" in a circular tube until he uses it, or wants to cancel it. This imitates the human mind again, where information may be stored without attention for years, then brought out and held for a time while the brain juggles some problem, to be dropped from consciousness afterwards. You don't keep the binomial theorem (or a favorite recipe) in your conscious mind at all times; but when you're working with it, you do retain awareness of it for as long as you find necessary.

Bozo can learn. The human mind learns by repetition. It's as if traveling over a road wore ruts in it which tended to make the wheels follow it the next time. With lack of use, those ruts would gradually wear away, smoothing out again. It is quite possible to design an electronic circuit (using our friends, the transistors) which behaves in just this way.

A capacitor will store a charge of electricity. If a tiny amount is passed through it, some charge remains, draining away slowly. If that amount repeatedly passes through the capacitor, faster than it drains away, the charge on the capacity will increase, up to a maximum level. With disuse, it will drain back to nothing in time.

A circuit with such a capacitor can be designed to conduct more easily when there is a charge on the capacitor. In other words, the more you use it, the easier it is to use. Bozo will develop habits, just as all of us do. He may even be a little opinionated, at times.

These developments aren't mere theories. To a limited degree, they are already in operation. The robot family hasn't reached the primate-equivalent, but it's already moving up through the menagerie.

A large part of the animal kingdom has gotten by for millions of of years on trial-and-error thinking, coupled with a few "instinctive" drives toward food, sex, etc. The fish and the amphibians sometimes arouse considerable doubt about the trial-and-error part; if food is put on one side of a clear sheet of glass and they are on the other, they may simply keep repeating the same unsuccessful attempt to go through the glass, even though it results in a painful bump every time.

A turtle, though, may be high enough on the scale to come to the decision that something is wrong—it looks like air, maybe it even smells like air—but it feels like glass! He's smart enough to decide, perhaps, that something else must be tried—say a few inches further down. He may stumble back and forth awkwardly, but eventually he has a chance of going around the glass and reaching the food.

The first of the scientific "playthings," as they were called by the snide element of the press, was appropriately named the tortoise, because it was a small creature shaped like a turtle, and moving about with equally slow lack of groce. By the aid of a bumper and a light, it demonstrated "hunger," food seeking, and trial-and-error thinking.

When its battery began to run down, it started trying to go to the light which marked its recharging hut. If an obstacle lay in the way, it didn't simply keep butting against it. It began searching for a way around, until it located a clear way to the recharger. Once recharged, it left the hut and came out to begin all over again.

That happens to be a maneuver which would have been considered highly complicated some time ago, and would seemingly have required a whole mess of parts. Actually, the governing "mind" took about one-tenth as many parts as an ordinary little table-model radio!

It was no plaything. It was an important milestone in man's simplification of what a thinking machine must be—and evidence that even our complicated minds aren't as much of a mystic maze as we once thought.

Another of Bozo's ancestors was the homeostat. This was perhaps the most remarkable device of all, since it exhibited judgment—independent judgment, with the obility to find a solution by its own choice—together with a degree of inflexible sanity that most men might envy.

Outwardly, its moving part was simply a needle on a dial. It was built with the need to stay in balance—to keep the needle to the center of the dial. (Not important, seemingly. But man sometimes finds himself with a job where his only need is to hold an even course between two extremes, and he finds it important enough then.) Inside, the machine was so arranged that the circuits could be altered in innumerable ways, each alteration tending to upset the balance which the machine had just achieved.

It would then hunt around within its mechanism until it could find an answering circuit which would bring it back to balance. No matter how hard its operator tried to ruin the balance, it found such a circuit every time.

The ability to learn was built into a gadget that behaved like a mouse in a maze. Some trickery took place there, since the maze did the "thinking," ond the mouse simply moved about. But that made no difference in the results, either theoretical or practical. At first, the mouse groped about and made numerous errors. But with repeated trips, it learned the combination and would proceed directly to the "bait." If left alone for some time, it would gradually forget.

Finally, we have Squee, the mechanical squirrel. He's outwardly more

complicated, but he's still a long way from being the huge and complex device that would have been built twenty years ago to perform his functions. He runs along the floor, hunting for golf-balls which he has been made to believe are nuts, apparently. When he finds one, he scoops it up, takes it to his nest, and then goes out to hunt for more. His whole method of search seems to be intelligent, from outward behavior. It's not a mere matter of covering every inch of space from wall to wall, but a search not unlike that of a real squirrel out hunting.

If you feel the yen to build something instructive and twice as much fun as a model car, you can get designs for Squee from the inventors, Edmund C. Berkely and Associates, 36 West 11th St., New York 11, N. Y. It's a good way to find out how logically simple a seemingly complicated device can be. One of the most valuable things in thinking is the ability to avoid going over every bit of the ground bit by bit and to cast about for the easiest path toward what you want. Squee illustrates this ability very neatly.

Bozo isn't doing too badly, it seems. He can be given trial-and-error thinking, judgment, memory, the ability to learn, and enough randomness to keep him out of a dead rut. He can be taught to manipulate symbols beyond the normal uses of the mathematical "thinking machines." And he can be built to take up less space and use less power than seemed possible, even in the wildest stretches of yesterday's imagination. It begins to look as if he can even be simple enough for men to understand him and design him for nearly unlimited growth.

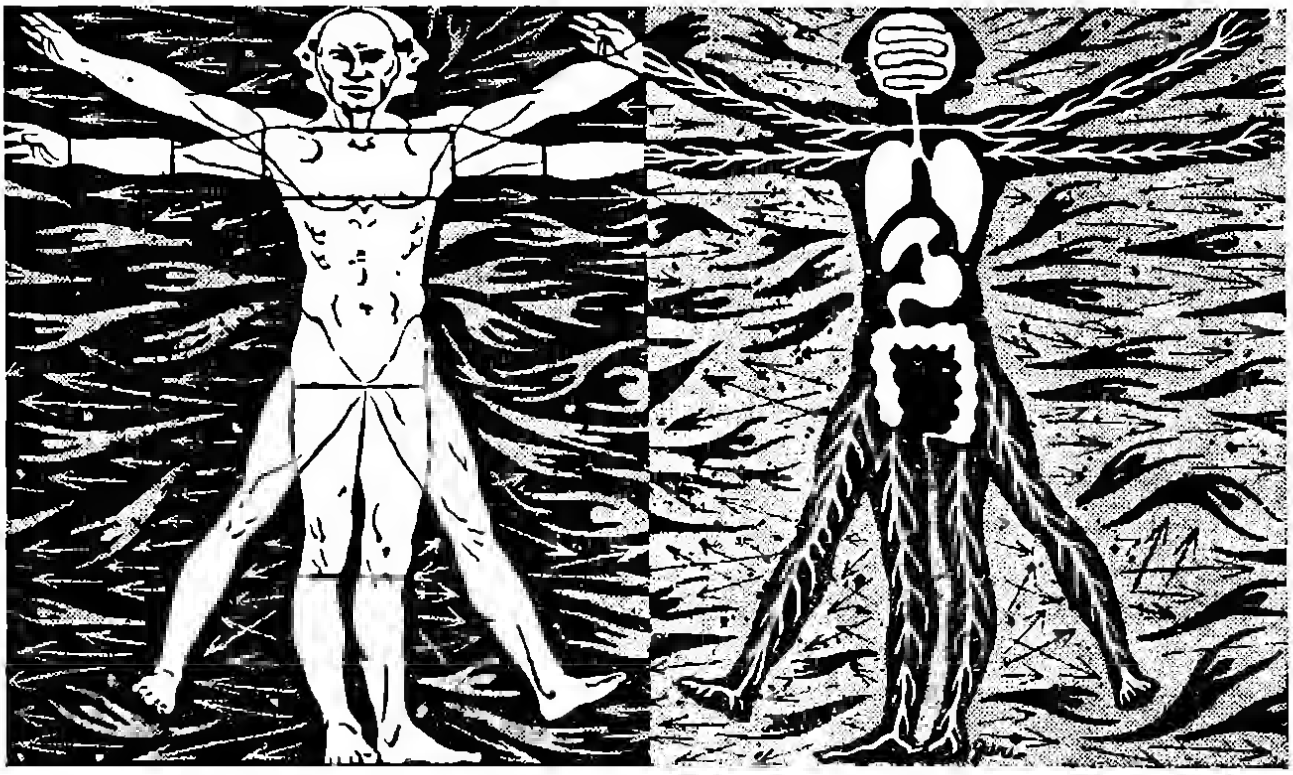
Bozo, incidentally, won't be quite like the typical science fiction robot. He'll be too expensive and valuable to mind the baby or drive the car. He won't be completely human, but neither will he be coldly unemotional—he can't be absolutely unemotional, so long as he has to deal with other intelligences which are subject to endocrine imbalances.

Almost certainly, he will make mistakes. It's impossible to screen out all false data, biased accounts, and misleading information. With such material to work on, he's inevitably going to come up with misleading answers. He may be able to acquire enough facts and work with fine enough a set of language symbols to avoid most of the errors people usually make. But, while he'll be no infallible idol, he'll be worth his weight in A-bombs.

The robots are coming—and sooner than we think.

In fact, I'm almost tempted to wonder whether that guy with the set expression I saw last night wasn't . . .

But of course not. That's as ridiculous as time travel!



A DAY'S WORK

BY WILMAR H. SHIRAS

ILLUSTRATED BY GARI

When the dead can be revived, what will it mean to the men who join the Revivification Squads? Shiras here brings us one of the most convincing bits of extrapolation we've found in science fiction!

As the alarm bell sounded, all the men stopped their various activities and stiffened to attention. The man who was reading marked his place with a forefinger, the card-players laid their cards face down, the dart-player remained poised ready to throw.

"Revivifying Center," said Collins into the telephone. "Yeah . . . Drowned? . . . How long? Two days? . . . Yeah. Sure. Too bad. Send the usual report"

The men relaxed and resumed their activities. Watson laid down his magazine and sauntered to the desk.

"Too bad they have to call us on a body like that," he said.

"Routine, Watson," said Collins placidly.

"What's the use of it?"

"Routine. All deaths reported as soon as possible, without any exceptions whatever. In this case we know the body was in the water two days. But we can't leave it to lay people to decide whether it's too late to call us."

"Sure," said Kenny, taking a handful of darts for his turn. "Even in the old times when there was nothing but artificial respiration, they'd work on them an hour or two before they gave up. Sometimes pulled them back, too, when nobody expected they could." His dart flew true to the center of the board.

"Oh, it's always worth a try," agreed Watson, "until decomposition begins to set in. But in the water two days and they call us—it's a waste of time."

"Immediate call and full report, required on discovery of the body," said Collins calmly. "Immediate call and action on all in danger of death. We—"

The alarm gong sounded again and the men froze in position. Collins took up the telephone.

"Right," he said when he had listened a moment, and he hung up.

"Crew Two, to Wilson Hospital. Caesarian going on the table."

"That's routine too," grumbled Watson. "Five to one they won't be needed."

"Stand by," continued Collins, addressing the three men who were preparing to leave—one of the dart players, and the two men who had been playing chess.

"We saved three women last month on calls like this," said Kenny, when he had thrown his last dart. "And one of them was my wife. It was her fourth Caesarian. She died on the third, too." He cast a look of dislike toward Watson. "If some guys had the running of this center, I'd have buried her twice, I suppose."

"Watson would have sent the crew," said Collins, still unruffled. "All that ails him is that he wants to have something to do when he gets there."

"I bet he'd have revivified that baby we had last week," said Fuller, one of the card players.

"Yes, I would," said Watson angrily. "It was murder. That baby could have lived."

"The doctors all agreed it would have been spastic, and a bad case," said Kenny. "We didn't kill it. It was dead, and the birth injuries were too extensive to make it desirable to revivify. The child's mother said the same."

"Get on with it," said Collins, and the three men, by now at the

door but showing a disposition to linger and join in the argument, glanced at the clock and went out.

"They don't seem to be in any hurry," commented Watson.

"No rush. The operation doesn't begin for twenty minutes," said Collins.

The remaining card players, their game disrupted by the loss of a player, began to lay bets on whether the crew would be needed at the hospital.

The door opened, and Collins, after a glance upward, looked quickly over the desk, chose the correct card and laid it before him, making ready to write.

"Crew One reporting," said Dr. Mary Hurst in her warm, quick voice. "Boy electrocuted by fallen live wire at 10:03. Call received 10:09. Crew arrived, 10:18. Boy revivified at 10:36. Adrenalin to heart muscle and oxygenated blood. Full report to follow in writing."

"How'd you get the black eye, Mary?" asked Collins, scribbling rapidly on the card.

"Struggling recovery, and I didn't duck in time," laughed Mary, pulling off her gloves.

She sat down at the table and began to fill out a long report form, while her two assistants relaxed. Phil Campbell lighted a cigarette; Sue Perkins picked up her knitting, a pink wooly mass which she hoped might some day become a sweater.

"We had a case just before you came, Dr. Watson," she said, knitting busily. "A woman died of a heart attack, and her husband didn't call us in time. Turned out he wanted to marry another woman. But he got ten years in the state prison."

"That scarcely seems possible, does it," said Mary Hurst, looking up from the crossword puzzle she was doing. "Imagine what people would have said fifty years ago if you had told them they could be imprisoned for not calling the doctors to bring a dead person back to life!"

"We had an elderly woman last week," said Campbell slowly. "She said she'd never forgive us. She said we ought to let the dead rest in peace. Her husband died some years ago—a load of rock fell on him—and her daughters-in-law didn't want her around at all, her sons didn't want to support her, she was too old to work and had no money worth mentioning, her son-in-law said she spoiled his children, her own daughter said that if she was out of the way her husband wouldn't find so much fault with her. And then when she

died, they all had to call us as fast as they could to bring her back, and we had to do it."

"That's awful!" said Watson reflectively. "What else could you do, though?"

"They didn't know that she knew how they felt," said Mary Hurst. "They all tried to act as decent as they could."

"Didn't she have friends?"

"Well, they were all old and feeble and she didn't see much of them," said Sue. "And the worst of it is, her family didn't want her back but they were afraid to let her stay dead, and she didn't want to live."

"I suppose when you get to a certain age—" said Watson doubtfully.

"Well, we can't live forever," said Kenny, "and it does seem that we ought to go when it's our time. But who's to say when that is?"

Another alarm alerted them all.

"Revivifying Center—yes—yes—" Collins was tense. "In the refrigerator? Good. And both legs also? That's right. Repeat exact location, please . . . Got it."

He turned to the eager roomful.

"Man fell in front of a train, both legs cut off, out in the country about sixty miles. Bled to death before they could get him out. They put him in the refrigerator in a farmhouse near by, and packed his legs in ice in the quick freezer there, too. Hope you make it in time. Crews Three and Four."

Rapidly he gave directions how to find the farmhouse, and as he turned back to the waiting phone, the crews were already leaving. Seconds later, the two ambulances roared off. Kenny and Watson and Clark were in one, sirens going and the traffic making way for them. Benson, Fuller and Johnson, of Crew Four, were to assist them.

"Think we'll save him?" gasped Watson.

"Man, probably; legs, maybe," replied Clark curtly, his eyes on the road as they tore out of the city and the speedometer needle passed the hundred mark.

There was no mistaking the farmhouse to which the dead man had been carried. A scarlet banner was waving, red flares burned, and several people were clustered by the road watching for the speeding ambulances. When they saw help coming, they all waved their arms and shouted, and then, following Collins' directions, ran to the house. By the time Clark had brought

the ambulance to a stop and Watson had leaped to the ground to open the doors, men had brought out the ice-covered dead man and his frozen, ice-packed legs. They placed them on the table inside the ambulance, which was also a hospital on wheels, and the doors were closed and the six men set to work. Watson, the newest man to the work, was the most excited, but all were quick and clear-headed. The lower part of the body was kept frozen while the legs were grafted back on, two men working on each leg, while the two chiefs, Kenny and Benson, worked on the man himself.

Outside, the crowd waited, breathless and silent, for nearly an hour. The doctor in general practice in the next town joined them and waited with them. A young man in great agitation rushed up and was hushed.

At last the doors opened and Clark stepped out and closed the doors carefully behind him.

"He'll live," he said, and at that the young man cried out.

"My father!" he said. "He'll live?"

"Yes. Is there a doctor here?"

The tall, stooped, elderly man came forward.

"Want to take over, Doctor?" asked Clark. "We can't move him for a while yet. An hour, perhaps. Who is he?"

"William Ritchie," said the young man in a voice that trembled. "I'm Bill. I—when can I see him?"

"Right now; but we don't want him to talk," said Clark.

The doctor and the young man followed Clark into the ambulance.

There lay the man who had been dead. His eyes were open, he was even smiling a little.

"Bill," he said. "You here?"

"Lie still," cautioned Kenny, who was watching the blood flow from a glass bottle through a tube into the man's arm. "Better not talk, sir."

"He's all right," said Benson cheerfully. "He needs another transfusion, we think. And then rest. As soon as we can move him, we'll take him to the hospital."

"His legs—?"

"Two broken legs is what it amounts to," said Kenny quickly. He pulled the needle from the man's arm. "And he's a bit shaken up, of course. If you'd like a little sleep now—?"

Their patient smiled again and closed his eyes obediently. Kenny beckoned to the elderly doctor and to Bill Ritchie to follow him outside. Two of the assistants followed.

"If you'll watch him for a while, doctor," said Kenny, "my men and I need a breather and a cup of coffee."

"I'll tell Mom," said one of the girls in the crowd, and she ran to the farmhouse.

"Crew Four can report back to the Center while I take Mr. Ritchie to the hospital. He doesn't know yet what happened to him. It's as well not to tell them too soon."

"Is he really all right?" asked the young man anxiously.

"He's alive. The heart action and circulation are normal, or nearly so. His legs too have good circulation. The bones must knit, the flesh must heal, and he's had a severe shock, of course. He recognized you, his son, and spoke normally. Everything looks all right to me. Doctor, watch closely the gauges on his feet, and particularly the one on his temple. Watch his temperature —we strapped a thermometer under his left arm. We'll give him another pint of blood before we start for the hospital."

The elderly doctor nodded his understanding.

The girl came running back from the farmhouse.

"Mom's getting things ready," she said, "and she wants to know, can you come up to the house, or if you can't leave we'll bring things down here."

"We can leave here, if you'll take charge, Doctor," said Kenny. "I'll have Fuller and Johnson stay with you, and send Watson and Clark down to relieve them shortly."

The doctor nodded again and went back into the ambulance, and the exhausted revivifiers went to the farmhouse, where the girl and her mother served them food and coffee in abundance.

"We sure gave that poor guy the works," laughed Clark, when the hot food had restored his spirits somewhat. "Stuck him so full of needles he looked like a pincushion!"

"Yes, we had to use every trick in the box, all right," agreed Kenny, pouring his third cupful of coffee. "We've just about got people trained so we can save them. Into refrigeration right away—that's the trick."

The girl who was serving them ventured to speak.

"We threw out all of the food to make room for him, and I don't know that we'll ever be able to use the refrigerator or the freezer again, thinking of a dead man in them in pieces."

"Huh, sister, that's no dead man!" laughed Kenny. "That

man's as alive as you are!"

"But he was dead, in there," said the girl doubtfully.

"He'll come walking up to the door in a few weeks to thank you," said Benson. "Listen, those things saved a man's life; they're pretty near holy. You saved a man's life with them. You aren't going to go squeamish when you look at things that save life, are you?"

"Sure," agreed Kenny. "Is he alive or dead? He's alive! All right! Watson, you and Clark go send the other fellows up here and you take their place. Sister, give me another piece of that cake. What are you feeding us cake for? Because the man's alive. Well, then. And maybe his son will buy you a new outfit if you ask him to."

"Oh, no," said the girl's mother, breaking eggs into a pan for the other men. "I see what you mean, doctor. I've already washed them good and clean, and we'll think no more about it except that the man's alive, and all's well that ends well. It's a wonderful work you do, and we're privileged to have a share in it."

"Tell us about it," begged the girl.

"Sure, I'll do that," said Kenny. And he and Benson by turns told the history of the work that had been started back in the middle of the twentieth century, scarcely sixty years earlier.

"—And some of the early revivifyings didn't work well," Benson told the wide-eyed girl. "Some of them were blind, and a few of them had other things wrong. You've got to keep them cold, you know — real cold — freeze them if you can. Sometimes, even yet, when legs are cut off like this, we can't make a success of grafting them back on again."

"Can you make people come back, no matter what they die of?"

"If any part is destroyed, if it's a vital part, we can't do anything about it. Some day we hope we'll be able to have a bank of spare parts the way we now have blood banks. But we can save people who die under operations — have a bullet removed from the heart, or something. We let the surgeon finish the operation, and then we bring the patient back to life."

"Come on," said Kenny. "Let's get back to Ritchie. We can give him that transfusion while the boys finish eating."

"Please," said the girl. "Can women do this work too?"

"We have two of them in our Center," said Kenny. "Mary

Hurst and Sue Perkins. They saved a little baby girl yesterday—she fell into a fishpool and bumped her head and when her mother found her she was dead. Tomorrow she'll be running all over the yard ready to fall in again."

"What do you have to do? Could I—?"

"Sure; come up and talk it over some time," said Benson, glancing at his watch.

When they returned to the Center, they found that Crew Five had been out and was just finishing a report.

Peters sounded angry. He turned to them as they came in.

"This man found his father dead in bed, didn't know how long—they thought he was taking a nap—so what? So he called the family doctor instead of us, and lost half an hour more! By the time the doctor called us it was too late."

Collins took down the telephone.

"Police? Homicide, p l e a s e. Yeah. . . . Revivifying Center. A delayed call resulted in failure to revivify. . . . Yeah. . . . No, there was no evidence that it was murder. Possible deliberate delay in reporting the death; and they called the family doctor instead of us. . . . Yeah. . . . They didn't call us at all; the doctor did. . . . Yeah. . . . Some people think they're still living in the dark ages, but can anybody be that dumb? Investigation ordered. O.K., Thanks."

He hung up.

"They get into some fine legal tangles over all this," Collins said.

The gong sounded again.

"Revivifying Center," said Collins into the phone. "Yeah. . . . Blew her brains out, eh. All right, send your report."

He turned to the others and said. "That was your old lady. The one we were talking about before. This time she's done it."

Kenny crossed himself.

"The poor woman," he said. "It's to be hoped she wasn't in her right mind. I'd never think she'd have done a thing like that. I knew her, too."

"She left a note," said Collins heavily. "She said she was dead by rights and by the will of God, and men had no right to go against it and bring her back, so she was going to set things right again. She said it wasn't a suicide at all."

There was no answer to that. The doctors of the Revivifying Center sat in silence for a full minute.

Then the gong sounded again, and Collins reached for the phone.

HOW PHONETIC CAN YOU GET?

If you don't like the way English is spelled, you can blame it all on Joe. He didn't like it either, if it's any comfort to you. He thought he had the solution, too. But. . . .

BY LESTER DEL REY

Sooner or later, into every curious man's life, comes the discovery that English isn't quite phonetic. With it comes the great light—the realization that about half our ills could be cured by eliminating the curse of irregularity from our spelling. Some of the greatest men have worked on this—G. B. Shaw and Theodore Roosevelt, to name two; and some of the lesser known men have come forth with their own ideas on the subject—such as most of the science fiction enthusiasts.

After all, one of the biggest problems today is getting enough education pounded into young minds before they begin to fossilize. We've found, generally, that a man reaches one of his peaks of creative thought at somewhere between twenty and twenty-five; at that time, he also has the enthusiasm to plunge into them with the greatest intensity. Unfortunately, he usually isn't trained to cope with the problems that come up for quite a while after that. Mastering a subject under our present system of education takes a great many years.

If some way could be found to increase the speed of education, it would obviously pay off richly in a single generation. If some way could be discovered to make the average student really dig into his subject without being forced, it would benefit us all in every walk of life.

Joe Fan had discovered the answer in phonetic spelling two weeks ago.

With it, people would begin reading books avidly before they learned to avoid them, just as they looked at television. They

would finish grade schools in four years with a much wider education, since teachers would have little to do beyond recommend good reading. They would finish high-school in three more; and with a wide acquaintance with reading on each subject taught, it would be a truly liberal education. Allow five more years for college, to include post-graduate work, and a man could be a Ph. D. at eighteen.

Besides, the only real stumbling block to making English an almost universal language was the spelling. Almost one-third of the world's population already spoke the language; but who wanted to spend seven years learning to write it correctly? With a world made up entirely of people who spoke a common language (many, of course, using English as only a second language), and all of them well-educated at eighteen — **why**, there was no limit.

Joe, of course, had already invented at least a dozen ways of phoneticizing English in the two weeks since he'd first stumbled on the idea. Now he was busy at his note-book, inventing the final, ultimate, perfect form. He hadn't yet discovered Dr. Bell's "Visible Speech" at his library, so he had no idea that a single set of symbols could be devised that would exactly reproduce any sound the human animal could make, but he wasn't worried over what he hadn't yet learned.

It was then that the little green man entered the room. Joe looked up at him, and nodded. Probably a Martian, Joe decided; he wasn't too surprised, since he'd always had a secret suspicion that one of those flying-saucers would get in touch with him some day

The green man shook his head. "Ixl, of the trans-Galactic Federation," he corrected, being a telepath—naturally. "I was just teleporting through on my way to Perth when I caught your thoughts; no time to discuss it, but since you've found the way to raise your race to Galactic levels, thought I'd give you a helping hand. Ever hear of alternate time tracks?"

Joe had, indeed. He'd just been reading a book the night before on all the possibilities of the future being a multitude of different futures, each stemming from the possible decisions that could have been made.

"Check," said Ixl. "Then here's a time-freezer. Push it part-way down, and you can get into a possible future from your discovery. Push it all the way down, and that becomes *the*

future. Simple little thing, just happened to have one handy. But you may find it handy. Here. So-long."

He was gone, but he left something looking like a Veeder-Root counter of the simplest design behind. On it were instructions—a little crystal that flashed all the uses directly into his mind. It really was simple—all he had to do was to make up his mind that he was going to do something, and then he could discover the results.

Joe didn't waste time speculating on it. He took one look at his "one sound-one symbol" phonetic script, decided he was going to get it published and have Congress immediately make it illegal to write in anything else, and pushed the button halfway down.

The dial began clicking. One—two—three—four—five. Five years into the possible future. Joe released the button, and looked around.

There were no books, curiously, on his walls. He got up and went to the window to see the perfect world outside.

It looked somewhat seedy. The entrance to the University across the street was boarded up. Joe stared at it, and glanced back quickly to the suddenly worn notebook beside him. He compared the symbols there with those scrawled by hand on the sign, and finally decoded the meaning. "Closed temporarily for readjustment."

The streets were comparatively empty, and most of the stores seemed to be closed. When Joe got down to the sidewalk, it looked even worse. He shook his head, and went along toward the newspaper stand where he'd always bought his magazines. It was closed, and falling to pieces. But the little delicatessen beside it was open, and the proprietor, Pepe, was still there.

Pepe nodded at him glumly. "How's bizz, Joey? You come back for to see old town, *que no?*"

"Been away five years," Joe agreed. "Hey, what's happened?"

Pepe shrugged. "You lucky. Me, I big fool. I stayed."

"But what happened?"

Pepe shrugged again, and then nodded toward Professor Hack, who had just entered. "You tell heem, Prof."

Naturally, the printing plants had come to a complete stop at once; they all needed new type, since none had the type-faces for the script. But the big trouble had been harder to grasp. The science journals also stopped, along with the magazines and

newspapers. The Government had promised to set things right quickly, but nothing had been done. Without typewriters which could write the new script, mimeographed forms, and all the other things needed, the Government had gone to pot before it could keep its promises. Most commerce had ended, too, since writing out all records and orders by hand—particularly when it took so long to transliterate into the new script—had been a tedious process, geared too low for the machine age.

He went back to his room, and pulled back the lever on the little machine.

Joe worked hard for a long hour before he came up with the ideal script which would still fit the type at hand. He finished and stared down at his sample:

"Wee kaen madifai xu beisik Laetin aelfabet bai xu introudukshun uv xu neseseiree daigraefs aend xu yuus uv ei regyuular speliq. Wix xis nyuu sistem, wee wil haev aol xu aedvaenteijez uv fanetiks wixaut enee uv xu trublz xaet mait kum frum traiiq tuu introuduus nyuu taipfeisez."

He wasn't quite sure whether it should be "fonetik" or "fanetik," but he comforted himself with the thought that all that would be taken care of automatically. And it would have an added advantage; with one form of phonetic spelling, people would get over their dialectical tricks, and develop into a group who really all spoke exactly the same language—nobody in the future would be in doubt as to whether a word had a short "o" sound, or a true "ah" sound.

This time, when he pressed down the button and waited, things were more normal.

The newsstand was open, he was happy to see. But the piles of magazines were missing. There were only two thin newspapers there, together with a few cheaply printed paper-bound books. A sign advertised that they carried the Bible in the new script.

Joe shook his head as the newsdealer came up. "No fiction magazines?"

"Huh? Where you been, bub? Ain't been any for about five years. You don't think anyone reads for fun, do you? We got a couple comic books, now—some of the young kids right in school, they kinda like to read. But fiction—haw, that's a laugh. But say. . . ."

His voice dropped to a whisper. ". . . Look, I know what you mean. I'm getting a small shipment in next week.

Genuine old style script, imported right from Havana, stuff you can read without stopping. Copy of *Forever Amber*, not a word in it in the new spelling! Only twenty bucks."

Joe stammered over it, looking horrified. "But there must be a lot of people who still read —and in the new script?"

The man shook his head. "Don't be dumb, bub. Me, I tried that stuff. Went to school a couple months. But they told me I had the old habit too bad, it'd take a year before I'd read this smoothly. Who's got a year to waste? Guess most of us felt that way. Oh, it's fine for the kids, maybe. My youngster does pretty good. I get him to read me the paper every night—all about how the government's getting back to normal. He's gonna be a typist when he grows up, now that they're paying two hundred a week for that. . . ."

Joe went back silently. The trouble, he decided, was human nature. It wasn't any new discovery, but it seemed new to Joe.

After all, it didn't matter whether the language was completely phonetic. If it was regularized, as was Spanish and as German had been for a long time. . . . After all, they had a couple pages of rules, but they were still simple enough.

Joe tackled the consonants first. The use of *k* for its sound was logical, but it looked ugly, and it was comparatively rare. He chucked it out, and substituted *c*, always with the "k" sound. It seemed to help. There were a number of other problems, but he soon found the answer to most of them. The vowels gave him the most trouble, until he realized that English does have a fair amount of regularity, even there.

This time, all he tried to do was to come up with a set of rules which could be put down onto a single page of typewriter paper, and which could be learned in a day or so. He tried out the result. There were still troubles. The use of "z" for the plural didn't look good. He found a way around that. Then there was the matter of a few words that gave constant trouble and made the result look peculiar. He finally compromised with a dozen exceptions.

The result of it all went down slowly:

B as in bib, C as in critic, CH as in church, D as in dead, F as in fife, G as in gag, H as in hothouse, J as in judge, L as in lull, M as in maim, N as in none, NG as in singing, NC as in uneut, NK as in think, N-G as in unguessed, NGG as in

fing(g)er, P as in pipe, CW instead of *qu* in quick, R as in rare, S as in sister, SH as in shush, T as in tot, TH as in this or thin, V as in verve, W as in will, WH as in when, Y as in yes, Z as in zoo, ZH for *z* in azure. And to make it look better, he added LK as in milk, and RK as in work.

The vowels were trickier. He had to use a four-place arrangement, using a symbol for the vowel in normal condition, another for it at the end of the word; then he had to indicate how the plural was formed, and how the normal hissing *s* was added at the end of a word.

He put down the normal form first, then the final, then the plural, and finally the use for a final hissing *s*.

A as in at; AA as in baa; AAS as in baas; ASS as in pass. AU as in pause, AW as in law; AWS as in laws; AUS as in clause. AI as in pain; AY as in pay; AYS as in pays; AIS as in pace. E as in yes; E as in eh; ES as in axes; ESS as in mess. EA as in beat; EE as in see; EES as in sees; EAS as in peace. I as in it; Y as in partly; YS as in parties; ISS as in miss. IE as in night; I as in try; IES as in dies; IESS as in ice. O as in not; A as in spa; AS as in spas; OSS as in gloss. OA as in road; O as in no; OS as in knows; OAS as in dose. OI as in oil; OY as in boy; OYS as in boys; OIS as in Joyce. OU as in house; OW as in how; OWS as in allows; OUS as in house. U as in but; UH as in uh; UHS as in uh-huhs; US as in us. W as in good; WS as in puss. OO as in loose; U as in glue; UES as in glues; OOS as in noose. EU as in feud; EW as in few; EWS as in news; EUS as in deuce.

Joe debated awhile, as he tried it out, and finally let in a few more unusual cases. LSE for pulse, LS for tells; NSE for danse; NS for duns; RSE for horse; RS for hours. AR for far; ER for her; EAR for fear; OR for more; UR for poor; EUR for pure. ATION for nation; ASSION for passion; ETION for completion; ITION for condition; OTION for motion; UTION for constitution; and EATION for creation.

Words set by themselves were BE, HE, SHE, WE, HIS, IS, WAS, OF, THE, THIS, TO, I, A, WHO.

It was a long ways from perfect, but it seemed to be the best that would be successful. And at least it would be workable, since the rules could be made into a table that would be

fairly easy to memorize. Those vowels looked bad that way, but they'd be all right in a table—and he could leave the tabulating to someone else. After all, all this could be learned in a week.

He tried it out on an old quotation he happened to remember:

"So liv that when thi sumons cums to join that ineumerabl cairavan that moovs toward that mistearius relm whair each shal taic his chaimber in the sielent hauls of deth, thow go not liec the cwairy slaiv at niet, scoorjd to his dunjon, but soothd and sustaind bi an unfaultering trust, liec wun who raps the draiperies of his couch about him and lies down to plezant dreams."

He had an idea he'd misspelled a bit here and there, but that could be corrected with time. Anyhow, that wasn't a very fair example. It was too darned literary.

Anyhow, it didn't look too bad.

This time. when he reached the future, there were almost no signs of disturbance. The street seemed the same, except for some of the well-known trade-marks, and even many of those looked as they had before. He grumbled a bit, and then decided that from now on he'd do his thinking in the new spelling.

Outsied, he found things about az he'd aulwaiz noan them. The cars wer a litl diferent, but not enuf to bother him. The neustand on the corner was stil dooing a gwd bizness, and thair wer a number of his oald faivorit magazeans, lwcing only slietly diferent. He found• that the muny in his pocet was stil gwd, and twc tu copys hoam with him.

For a whiel, the fasination of the script which he had invented held his interest. He admierd the new speling whenever he caim to a werd which was the saim as it had aulwaiz bin. He decoaded the unfamilyar werds without tu much dificulty. And jeneraly he felt that he had dun a jeneuin serviss to his cuntry and to the werld.

Thair was an editorial in wun of the magazeans which tucht on the subject of the reformd speling, and he devourd that.

It paid aul the tribeut he had ecspected to the improovments that had bin maid, and credited him with the advansment. It went into the ferst few munths of dificulty in shifting oaver to the new habits in tieping and seting tiep, but admited that having a rassional orthogr?fy

was wel werth aul the trubl that it had taicen. It braut a glo to Jo's fais az he red on.

Then he fround. "The ferst step has bin taicen," the editorial went on. "We hav rooted out only the begining of the trubls of our sistem of edeucation. Now let us go on frum thair. We hav fienaly pwt ourselvs on az gwd a fwting as that of Spanish or Jerman. But az we shwd hav noan, meni of the ecspected benefits ar not cwiet az grait az it was wunse hoapt thay miet be.

"The bigest problem remains that of geting enuf edeucation poundcd into yung miends befor thay begin to fosiliez. If sum way cwd be found to increas the spead of edeucation and maic the yung steudents taic advantaij of the bwcs around them, we cwd go on to a trooly grait feuteur. Children shwd begin reading bwcs avidly, insted of avoiding them to lwc at televizhun. Thay shwd finish graid scools in for years with a much wieder edeucation, if teachers cwd get them to read wiedly insted of mearly lisen to lecteurs. Thay shwd finish hi-scool in three mor; and with a wied acwaintanse with reading on each subject taut, it wwd be a trooly liberal edeucation. Alow fiev mor years for colej, to inclood poast-gradeuait werk, and a man cwd be an F. D. at aitean."

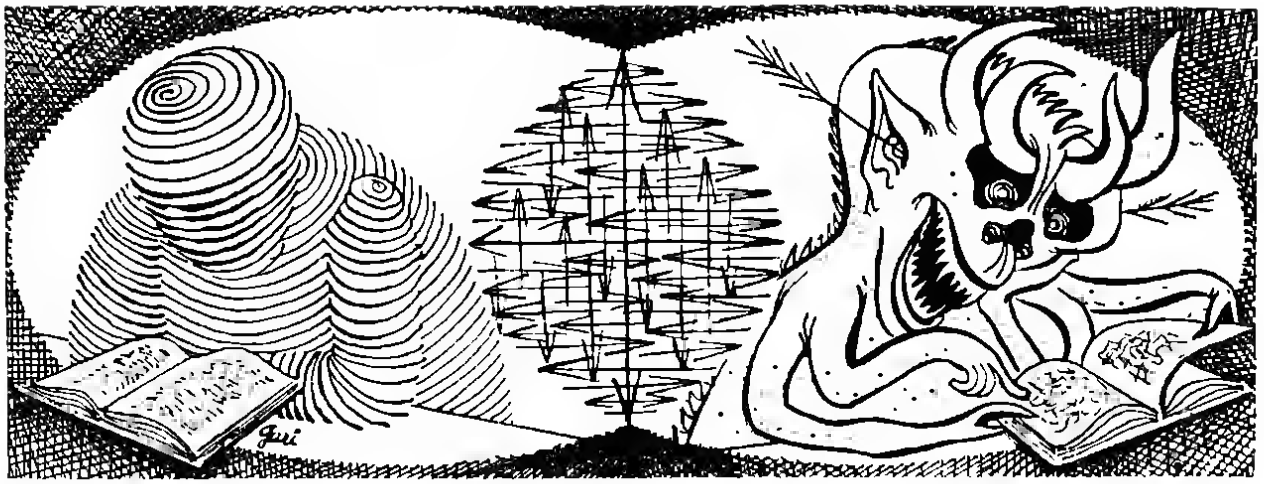
It aul sounded familyar to Joe.

But his eyes hurt. He jerked them back from the page and then turned on through the magazines. He began reading one of the stories, but somchow, he couldn't get into his usual rapid swing of reading. There was something wrong with him. . . .

Then he grunted, and got up wearily. He reached for his machine, and pulled up the lever. At once, he was back again in his own present. On the floor lay a magazine with an article on phonetic English. He kicked it shut hastily, and let his eyes rest on the rows of books, and on another open magazine.

He knew what he was going to do now. He made up his mind that he would keep English exactly as it was. And with that decision, he pushed the lever all the way down, making sure that such would be the only possible future.

That's why you haven't got a chance with any system of phonetic English you may come up with. Joe set it that way. People just won't change. And if you don't like it, you can blame it all on Joe!



THE ORDEAL OF PROFESSOR KLEIN

BY L. SPRAGUE DE CAMP

ILLUSTRATED BY GARI

Much of the earliest science fiction was satirical and meant to point a moral about current conditions, such as "Gulliver's Travels." Another form was the story dealing with science, but based upon some kind of horror, such as "Frankenstein." Today, these stories are rather rare, and a combination of the two is almost unheard of. Frankly, we're somewhat puzzled as to the reason, since L. Sprague de Camp proves that it can be done. We particularly want to know how the readers feel about this story, and whether they'd like to see more.

The grim and horrible fate that betook Professor Klein in the eldritch vaults of Kterem astounded the world. It shouldn't have been too surprising, though. It is already threatening most of us—even today!

There has been much loose talk about Dr. Alphonse Klein's mental illness and its connection with our expedition last year to the city of Gdoz on the planet 61 Cygni A VI, or Kterem to use a native name. Irresponsible journalists and rumor-mongers

have spoken and written rashly of hereditary taints and instabilities, of horrors in this lost city too frightful for mere human beings to contemplate, and of the subtle effect of the poisons with which the amiable natives anoint their arrows.

There have been speculations to the effect that Dr. Klein read a mouldering inscription at Gdoz whose dreadful prophecies unseated his reason. The surmises have even hinted darkly that Dr. Klein's nervous breakdown was somehow brought on by his assistant; that, for instance, this assistant stole, for his own felomious purposes, a priceless manuscript to the search for which Dr. Klein had devoted a lifetime of work. . . .

As that assistant, it is therefore incumbent upon me to set the record straight. First be it understood that this is no sensational horror-story but a sober record of the Klein-O'Gorman expedition. And while our experience was certainly trying and disconcerting enough, and contributed without doubt to Dr. Klein's unfortunate indisposition, the use of such highly colored terms as "horrible" and "ghastly" betoken a hopelessly unscientific approach to the question and will therefore be most rigorously eschewed.

The reason that I have not made these events public before this is that I was forbidden to do so by my contractual relationship with Dr. Klein.

Some years ago Dr. Alphonse François Klein retired from academic work as a professor of paleography at the University of London to devote his entire time to exploration and paleographic research. Though by frugal living and shrewd investment policies he had amassed a modest competence in addition to his pension, he nevertheless found it necessary to defray the cost of his expeditions by such means as are open to professional explorers: the publication of books and articles and the delivery of lectures.

As is customary in such cases, he required any assistants who accompanied him to agree as a condition of their employment that they would not, for a specified period after their reurn to Terra, deliver lectures or sell books or articles about the subject expedition without his express permission. This precaution was necessary to prevent unscrupulous or over-enthusiastic assistants from competing directly with the Doctor and thereby depriving him of the means for continuing his exploratory career. Inasmuch as

the stipend which he paid his assistants came from the money that he earned in this manner, the restriction cannot be considered unfair, especially as Dr. Klein has always been most generous in his interpretation of this clause in his contracts.

Upon returning to Terra and proceeding as I had planned to take my Doctorate of Philosophy, I should in the normal course of events have observed the restrictions of the contract without cavail. However, as a result of the aforementioned speculations and rumors, I found myself handicapped in the employment of my talents. I therefore visited Dr. Klein in the sanitarium where he resides to ask for a waiver of the no-publicity clause so that I could explain the true cause of our misfortune.

When I was shown into his room he seemed quite lucid. He rose and greeted me warmly: a tall man of middle age, with a stooped posture, a shuffling walk, and a deeply-lined face beneath receding gray hair worn rather long. Though his manner is superficially vague he misses little. He has one slight but disconcerting peculiarity: being an Alsatian by birth, he speaks English sometimes with a French and sometimes with a German accent, depending upon which language he happens to be thinking in.

"How are you, Barney my boy?" he exclaimed heartily, and then told the male nurse: "You may go, Withers. I have matters to discuss with my colleague Mr.—it is Doctor now, is it not? —Dr. O'Gorman."

The male nurse rose, but scarcely had he left the room when an alarming change took place in Dr. Klein's manner. He leaped to the wash-stand. snatched up the bar of soap lying thereon, and rushed towards me brandishing this object and screaming, "Soap! Soap! Soap!"

Inferring from my unfortunate colleague's gestures that his intent was to force the bar down my throat, I grasped his wrists and restrained him until professional help arrived. I could do this because, though half a head shorter than Dr. Klein, I am heavier than he, not to mention considerably younger. When the attendants had subdued the distraught paleographer I withdrew to consider my situation.

This seemed discouraging indeed until I learned that a guardian had been appointed for Dr. Klein pending the completion of his cure. I accordingly visited this guardian, an old friend of

Dr. Klein named Professor Le Sage, and made arrangements with him for the publication of this article with the understanding that the proceeds of its sale should be paid to him in trust for Dr. Klein. I am reliably informed that Dr. Klein's cure, though reasonably certain, is likely to take at least another nine months to a year, and I cannot afford to wait that long before setting the true facts of the case before the public and more especially before my professional colleagues.

When we first planned this project, Dr. Klein explained the purpose of the expedition: "Barney," he said, "this will the biggest thing in my line in years be! This Kamzhik, whom I met in Svcho, has been to Gdoz, through the country of the Znaci and back again with a whole skin. And there, in the ruins of the royal library of the Hrata Empire, he swears he saw a manuscript written in both the Skhoji script and the Hrata Pictographic."

"Yes?" I said, for being a biologist I am a bit hazy on the finer distinctions of paleography. Klein explained:

"No authentic history has survived from the Hrata Empire; nothing, that is, but a scattering of legends comparable to our own Charlemagne and Trojan cycles and probably about as historical. Many ruins of the Hrata Age bear inscriptions in what is taken to be a pictographic signary, but nobody can read it. There are also a few inscriptions and manuscripts from the end of the Hrata period, before the barbarians like the Znaci overthrew them, in the phonetic Skhoji writing. We can read this all right, but we have yet to find a bilingual inscription comparable to the Rosetta Stone or the Behistun Inscription to serve as a key."

I asked: "But the Hrata language survives, doesn't it? So why can't we be matching the known words of it with the pictures until we find a meaningful combination?"

"Because it would forever take, the number of possible combinations being astronomical, and when you got your meaningful combination you would have no means of checking it. It is believed that the signary is partly ideographic and partly syllabic, but even that is not certain. There have been a few surmises as to the meaning of some of the pictographs. This one, for instance." He opened a monograph on the subject and pointed to some-

thing that looked like a pregnant lizard. "This is thought by Le Sage to mean the syllable *shi*, but I think it more likely that it stands for the syllable *psa* and also the word *psaloan*, 'maybe'."

"Don't the other Kteremian languages offer you any clues to all this?"

"Not a bit. Znaci and its related dialects are as different from the Hrata group as Japanese, let us say, is from the English and the other Teutonic tongues."

"Then how about this thing in Gdoz?" I inquired.

"As I say, this Kamzhik asserts that he found a sheet of zahalov-parchment inscribed on one side with the Skhoji writing and having a lot of pictures on the other. He did not bring it with him, not realizing its value, nor did he look at it very intently since the Znaci were hunting him. Although the Kteremians are all strictly bark-eaters, the Znaci have the disagreeable habit of cutting visitors up and performing magical rituals with the parts to make their food-trees grow, and it was to this infamous use that they wished to put Kamzhik. But if that sheet is still there—and the stuff is practically indestructible—it may give us the key to all those inscriptions in the Hrata Pictographic."

We landed, as everyone does, at the spaceport city of Sveho on Kterem, where we saw at first-hand the effects of a large Terran colony upon the Kteremians. Though interesting to a student of cultural interpenetration, these effects were depressing to one who would regard Kteremian culture as an integral object of aesthetic contemplation. Even I found it difficult to retain an attitude of purely scientific detachment.

For it was obvious that the influence of the Terrans upon the Kteremians is much greater than the influence in the reverse direction, as is to be expected in view of the technical superiority of Terran culture. Also, of course, the culture-traits most readily transmitted are those which a subjective point of view would term the vices of earthly culture.

We saw Kteremians wearing jackets and trousers in imitation of Terrans. These garments are cut to fit their entirely inhuman forms but serve no useful purpose, since the Kteremians' feathery pelts provide them with adequate protection against variations in temperature. We saw them frequenting places of

amusement patterned after those of Terra, gambling, becoming intoxicated, making grotesque attempts to imitate Earthly dances, and so on.

Dr. Klein did not pretend to view this evidence of the breakdown of the native culture with unemotional objectivity. Somewhat of a Rousseauan romantic primitivist, he remarked one day: "Once we get out of this stinking city, my dear Barney, things will be better. Finding old inscriptions is only half the reason I go on these expeditions. The other half is the joy of getting away from human so-called civilization and back to Mother Nature. Look at that! A magazine stand, with comic-books, even!" He pointed to a large slick-paper American magazine, reprinted locally from microfilm brought from Terra, whose policies he particularly deplored. "Sentimental slush! And look at that garish advertising sign! If I dared I would chop it up and burn it myself, that one!"

At this point Dr. Klein launched into his usual tirade against advertisers, calling them professional liars and so forth. The sign in question adjured all who read it in several languages, both Terran and Kteremian, to be sure to smoke the Russian government's Astrakhan brand of cigarettes. I could see Klein's point of view, even while I privately deplored it as unscientific.

At length, after filling out the usual dekaliter of forms in octuplicate, we were allowed to fly to the outpost of Severak where we met Klein's Kteremian acquaintance Kamzhik and the helpers whom he had rounded up for us. Kamzhik was small for a Kteremian, hardly taller than Klein, and a garrulous fellow who talked continuously in a strong accent. Of the helpers, Slunko, Nyeya, and Tshaf, none spoke any Terran language, wherefore I had to communicate with them through Kamzhik. Klein spoke their dialect fairly well, though lacking their great incisor chisel-teeth he could only roughly imitate the whistling sounds that comprise an element of their phonology.

In Severak, Dr. Klein made arrangements to rent a small aircraft to fly to the neighborhood of Gdoz. It is a misapprehension to consider Gdoz a "lost" city. It has long been known from aerial observation, but had never, except for an abortive treasure-hunting party, been visited by Terrans because of the difficulties of reaching it on the ground. Its situation

makes the alighting of aircraft in its immediate neighborhood hazardous or impossible. Gdoz stands in a narrow valley, the Valley of Plashce, amidst steeply irregular mountains, and the strong prevailing winds make the air so turbulent in the neighborhood of these jagged peaks that a landing there would be merely an unnecessarily costly form of suicide.

Dr. Klein, however, took Kamzhik and Tshaf and me in the aircraft to the vicinity of Gdoz. We could plainly see the city lying in its narrow valley, and after hours of hovering and circling we found a small plateau where the wind was steady enough to permit a landing, where the ground was bare enough to obviate the danger of the nyikh-vine's swarming over the machine in our absence and clogging the tubes and jamming the controls, and where the situation was high enough to prevent the wild Znaci from seeing us and smashing up our machine by way of paying their respects.

Dr. Klein then returned to Severak and ferried the remaining helpers and supplies in two more trips. From this plateau to Gdoz was a good three days' hike, for though the distance was less than twenty-five kilometers in a straight line, the extreme ruggedness of the terrain necessitated a circuitous approach. This distance, however, was short enough so that the Kteremians could carry all our food for the round trip, and therefore it was not necessary to resort to the more complicated measures with which expeditions meet logistical difficulties: the staging of supplies, the peeling off of fractions of the party who have been carrying food for the rest, and the planting of caches for the return trip. Food for the Kteremians presented no problem, as they could always live on the bark of the ambient trees. They have however acquired such a taste for Earthly coffee that no explorer can induce them to accompany him unless he will share his supply of this beverage with them.

I will not detail our experiences on this three-day scramble, for though interesting to one with a taste for narratives of outdoor adventure they have little bearing on the final outcome of our journey.

I shall merely mention that we were nearly drowned in a bottomless swamp, and were chased by an uyedna, twice the size of a Terran elephant. We heard the war-drums of the Znaci and were stalked by them, receiving

a shower of poisoned cross-bolts without ever seeing the arbalestiers. One missile struck Tshaf, who died in great pain from the poison.

We fired a few shots at random into the bush and pressed on to more open country at the outlet of the Valley of Plashce. The drums died out behind us. We could not be sure whether the Znaci gave up the pursuit because the thinning of the vegetation would have made it necessary for them to expose themselves to our fire to get within crossbow-range, or whether, as Kamzhik averred "Znaci no go near Gdoz; afraid of evil spirit of Hrata king."

Despite his years, Dr. Klein proved himself a woodsman of uncommon resource, adroitness, and endurance. At the end of a long day, when I was reeling with fatigue, he would be slouching along without visible sign of abatement of his powers.

Towards the end of the third day we reached the ruin. I must testify that for somber magnificence it puts such Terran cognates as Ankgor Wat and Petra and Copán to shame. Moreover I became aware of a growing feeling of uneasiness within me, as if Kamzhik's primitive gossip about the evil ghost of King Zahal the Fiendish were to be taken seriously. Of course I immediately dismissed all such unscientific feelings as mere subjective illusions begotten by fatigue and childhood complexes. With an effort I managed to retain my unemotional objectivity.

The city of Gdoz has of course suffered greatly with time and delapidation, especially from the sack of the city by the Kalcimvi army 846 Kteremian years ago, when the Hrata dynasty was extinguished, and again from the depredations of that band of Terran treasure-hunters forty-odd years ago. We learned from Kamzhik that these adventurers found no treasure and were captured by the Znaci, who employed them in their immemorial magical rituals. My colleague was heard to mutter: "Serves those *scélérats* right!"

Now Dr. Klein became greatly excited over the hundreds of inscriptions on the still-standing walls of Gdoz. These appeared to be all in the Hrata Pictographic writing. Dr. Klein dashed from one to another, exclaiming over them and bemoaning the fact that the day was too far gone to start photographing them.

"If we can only find a bilingual inscription," he cried, "we shall rank with Champollion and

Rawlinson! Where is this library, Kamzhik?"

The Kteremian led us down one overgrown street after another, scrambling over or skirting around the great blocks of stone that had fallen into the street from the buildings flanking it. At length he halted before a big building half of which still stood, though its stones were fire-blackened. Then he led us inside. We trod softly as if the vibration of our footsteps might bring down the teetery remains of the structure upon our heads.

Here and there we saw a few charred and crumbling remains of the wooden stacks projecting up out of the thick dust, from which the books had long since vanished. We understood that those that had not been destroyed at the time of the sack were all taken away as loot, then or later. A few of these still exist, either the originals or copies, but all are written in the Skhoji script which had then replaced the much more difficult pictographic signary, and none sheds any very clear light upon the history of the Hrata Empire.

"Well?" said Klein, dancing in his eagerness.

"Is over this way," said Kamzhik, and led us to where a pile of rubble in one corner had been pulled apart to expose a genuine Hrata book.

As you probably know, Kteremian books take the form of a codex with all sheets bound together, as with all Terran books of the present day, but the binding is across the top instead of at the side. Therefore one reads such a book by flipping the pages upwards as if it were a stenographic pad.

The present book was large but thin, with covers of thin ftse-bark about 25 by 35 centimeters. Across the front of the cover were written a number of characters in the Skhopi script. Klein explained:

"A periodical. That word in the large characters in *qazhov*, 'existence', and the legend below it is a date in the old Hrata sacred calendar. This is evidently a copy of a magazine; the Hrata had them, you know."

With trembling hands Klein raised the cover. Inside there was only one sheet of zahalov-parchment, all the others having been torn out at some remote time. Over Klein's shoulder I could see that this sheet was covered on its upper side with Skhoji writing. Klein raised the page to look at the back.

The back bore, as Kamzhik

had promised, pictures—but not, obviously, characters in the Hrata Pictographic script. I do not believe that Kamzhik deliberately misled us in this matter; he simply did not know the difference. Instead there was a cluster of illustrations in the center of the page, and a border of Skhoji characters around it. Klein stared, turned the book this way and that, and then went back to the first side of that one page. His hands trembled violently and he spoke in a strangled voice:

"My Barney, shall I read it to you, this one? It is part of a story, and the text on this page begins as follows: *"Rákaslun tsese háda lig doznyi khyesil nyey shí* . . . He clasped her to his feathery bosom with his brawny arms and affectionately nibbled her ear with his great pink incisors. She trembled with ecstasy. But then a frown clouded her broad clear forehead and she drew back modestly. 'But Vzdal, dear,' she breathed, 'what about your other wife?' It goes on and on like that! *Herrgott!*"

I asked: "What about the back?"

"Do you want to know what the back is?" shouted Klein, the veins standing out on his forehead. "The text around the margin reads: 'Use Prvnyi's excellent soap! Cleans cleaner! Cleans whiter! No more back-breaking toil for Mother! Buy from Prvnyi!' And these woodcuts in the middle show a female Kteremian employing the soap to cleanse her offspring, house, and other properties! Soap! Soap! Soap!"

Dr. Klein's voice rose to a scream as he flung the remains of the book from him. Knowing his reverence for relics of antiquity I was astounded, and then alarmed as he burst into a fit of maniacal laughter, rolling about in the deep dust of the floor.

"Help me tie him up!" I cried to Kamzhik. "It's a madman he is!"

But the native refused to take any part in securing my unfortunate colleague. After all he had only my word that I was the sane one of the pair, and he saw no reason for getting involved in a dispute between other worldlings. I therefore was compelled to complete this distasteful task myself. I received a black eye in the process, for Dr. Klein proved deceptively strong and agile in close combat.

After a nightmarish return journey, during which I came perilously near to losing my scientific objectivity altogether, I delivered my colleague to com-

petent medical care, under which he is now well on the road to recovery. The Hratan magazine is in the British Museum awaiting Dr. Klein's eventual attention, though it seems improbable that the study of its one remaining sheet will shed much significant light upon the multifarious problems of Hratan history. Certainly it offers no hope of ever serving as a means of translating the mystery of the Hrata Pictographic writing.

This is the story of the Klein-O'Gorman expedition. It is, as you see, a quite unspectacular one, although unworthy of the lurid surmises and rumors that the unprincipled gossip-mongers have circulated in recent months. I trust, therefore, that this clarification will terminate the proliferation of these scurrilous and vicious canards once and for all.

Advertising is practically the life-blood of our culture, and there is no way of knowing where it will end. Much of it serves a useful purpose. Without it, we'd have a hard time keeping up with what is going on in the world. In fact, when we get a paper on Sunday, at least half of us really buy it for the advertisements.

What are the features of such and such a car, where can I get a certain brand of typewriter, what will fill the needs in my office best, or where can I find a machine to do this difficult job? All these questions are answered by the advertising.

But sometimes it seems to get out of hand. A short time ago we were all going to cure the common cold with the anti-histamines. People went out by the millions to buy these dangerous, partly tested drugs. They went on buying them, long after the cure for the cold had proven worthless, because the advertisements still told them to. Now they're all buying the chlorophyll tablets and preparations that will cure all kinds of body odors, just as they used to buy soap. And so glib are the advertisements that no one stops to wonder why cows should have bad breath or body odor at times—when they practically live on a diet of chlorophyll!

Good advertising would be the kind which honestly presents the facts to the people, as the advertisements so often do in the trade journals. But the kind which has its emphasis on selling anything, just so it sells, seems to be getting out of hand.

Maybe psychodynamics is actually already here, working overtime. There must be some good explanation of why people will buy things like chlorophyll when their own backyard grass costs nothing!

BOOK REVIEWS:

THE DISSECTING TABLE

by DAMON KNIGHT

Some readers (not to mention writers, editors and publishers) may be unpleasantly surprised by the pugnacious tone of the reviews that follow. I won't apologize—not very often, anyhow—but I will explain. This department operates under certain basic assumptions, all eccentric, to wit:

1. That the term "science-fiction" is a misnomer, that trying to get two enthusiasts to agree on a definition of it leads only to bloody knuckles; that better labels have been devised (Heinlein's suggestion, "speculative fiction" is the best, I think but that we're stuck with this one; and that it will do us no particular harm if we remember that, like "The Saturday Evening Post", it means what we point to when we say it.

2. That a publisher's jacket blurb and a book review are two different things, and should be composed accordingly.

3. That science-fiction is a field of literature worth taking seriously, and that ordinary critical standards can be meaningfully applied to it: e. g., originality, sincerity, style, construction, logic, coherence, sanity, garden-variety grammar.

4. That a bad book hurts science-fiction more than ten unfavorable reviews.

The editor disclaims all responsibility; angry subscribers please apply to me.

THE CITY IN THE SEA, by Wilson Tucker. Rinehart, 250 pp., $2.50 • From old-time fan Bob Tucker, light-hearted contriver of Hoy Ping Pong, The Society for the Prevention of Wire Staples in Science Fiction Magazines and other wonderful nonsense, and from Wilson Tucker, the brilliant detective-novel writer who inhabits the same gangling body, this book is a resounding disappointment.

Tucker's mystery novels are sharp, knowledgeable, tightly plotted, eminently readable. *The City in the Sea* is a sparse collection of outworn and inaccurate ideas, loosely woven into a muddy, awkward, ungrammatical narrative.

The ideas: Post-atom-war barbarism, matriarchy, mutations (including that hoariest phoenix of all science-fiction absurdities, the Winged Man).

The plot: The eastern seaboard of North America has been colonized and garrisoned by a semibarbarous female-dominant race native to the British Isles. An eligible bachelor from a long-lived, physically and mentally superior mutated group in the interior visits the garrison and succeeds in leading a hundred of its women halfway back across the continent for breeding purposes—his people are as short of women as the colonists are of men.

Ignored or painfully fumbled are the difficulties of cross-breeding between radically mutated subspecies and the Mendelian consequences if it should prove possible.

Regrets and apologies to Bob Tucker, who will almost certainly deserve and get better treatment next time his name appears in these pages. Prunes to Rinehart's editorial staff, whose work on this book apparently stopped at the (beautifully-executed, by Richard Powers) jacket.

THE ASTOUNDING SCIENCE FICTION ANTHOLOGY, edited by John W. Campbell, Jr. Simon & Schuster, 583 pp., $3.93 • This husky volume contains 22 stories and an article *(Meihem in ce Klasrum),* all of them first published in *Astounding Science Fiction* between 1940 and 1951. Many have been anthologized before, but this collection has a unique value as a record of the most brilliant and fertile decade in science-fiction's history. Despite the editor's disclaimer ("The stories herein. . . . I feel are genuinely intriguing, important, and good—though not necessarily 'the very best' of each author's works") most steady readers will recognize nearly every story in the book as an acknowledged classic of its type, and a grade-A sample of the author's work.

The stories are arranged chronologically, with at least one selection for each year—except, oddly enough, 1942. This minor quibble is the only fault I can find in the book—I would have preferred van Vogt's 1942 *Cooperate—Or Else* to his 1940 *Vault of the Beast,* for one example, and I'm sorry Anson MacDonald's *Goldfish Bowl* was not included.

Authors represented are Robert A. Heinlein, Jack Williamson, A. E. van Vogt, L. Sprague de Camp, Isaac Asimov, Lewis Padgett, Lawrence O'Donnell, John Pierce, Murray Leinster, Dolton Edwards, Eric Frank Russell, T. L. Sherred, William Tenn, Theodore Sturgeon, Kris Neville, Clifford D. Simak, James H. Schmitz, Lester del Rey, William T. Powers, H. Beam Piper, (Murray Leinster, agent) and H. B. Fyfe. Notably absent: L. Ron Hubbard.

INVADERS OF EARTH, edited by Groff Conklin. Vanguard, 333

pp., $2.95 • The theme of Conklin's newest anthology gives it more coherence and, to my taste at least more interest than that of his first "idea" collection, *Passible Warlds af Science Fiction*. The indefatigable Conklin spadework is here more in evidence: the volume cantains stories—and good ones—from such neglected and unlikely saurces as *Super Science Staries, Marvel Science Stories* and *Imaginatian*. It also contains the Howard Koch script of Orson Welles' 1938 "Invasian from Mars" broadcast, a translation by Willy Ley of a story never befare published in America, Karl Grunert's *Enemies in Space*, and a previously unpublished shart-short by Anthony Boucher, *The Greatest Tertian*.

Conklin has kept sure-foatedly away from the commoner sorts of invading menaces, with the result that the collection is gratifyingly varied and ingenious, from Eric Frank Russell's malignant virus to Fredric Brown's innacent but devastating radio-energy creatures, ta Edgar Pangbarn's infinitely appealing "angel". A further consequence is that the book is short an grim canflicts, long on wit and irany—which I think is all to the gaod.

One footnote: Leinster's *This Star Shall Be Free* and St. Clair's Child *of Vaid* give me a springboard far a suggestion I've lang wanted to make to antholagists.

Most magazine editars take a reasonable view of story titles—i. e., that a title has three functions, to describe the story, identify it, and intrigue the reader. A few, hawever, are afflicted with a disease which might be labeled "pathalagical revisionism". The symptams are (a) endless title conferences, (b) increasing dependence an a handful of "good" title words, reshuffled and recombined ad nausem, and (c) total neglect of function Na. 1—description of the story.

Margaret St. Clair's shart stary (which, incidentally, has ane af the laveliest punchlines I've ever read) was ariginally called *Refugee*. I've forgatten the original title of Leinster's navelette, but I know it was a serviceable and descriptive one. A more poignant example (not from this valume) is Ray Bradbury's perfectly-titled *R is for Racket*—which appeared in the magazine, and in a subsequent anthology, as *King af the Grey Spaces*.

The suggestian, af caurse, is that when an anthologist finds himself with a story whose published title is sense-free and/or unrelated ta the text, he should apply to the author for the original.

ROCKETS, JETS, GUIDED MISSILES AND SPACE SHIPS, by Jack Coggins and Fletcher Pratt; Introductian by Willy Ley. Randam Hause, pages not numbered, $1.00. Physically, this is a thin 8" x 11" baak, bound in boards, with a brightly-colored cover instead of a dust-jacket;

you may find it displayed in drug and department stores, racked with other juvenile books in the same format.

The Coggins water-color illustrations, over twenty of them in full color, are delightful—if you have a spare dollar, they alone are worth the book's price.

The text, a compressed but reasonably comprehensive survey of the rocket field, is interestingly and well written for the most part, although in places it becomes slipshod. Unfortunately, it is also riddled with technical errors, some of them pretty startling, as when the authors state that "A meteorite that approached the spaceship) on anything but the collision course would drift in gently and attach itself to the rocket like a barnacle. . . ."

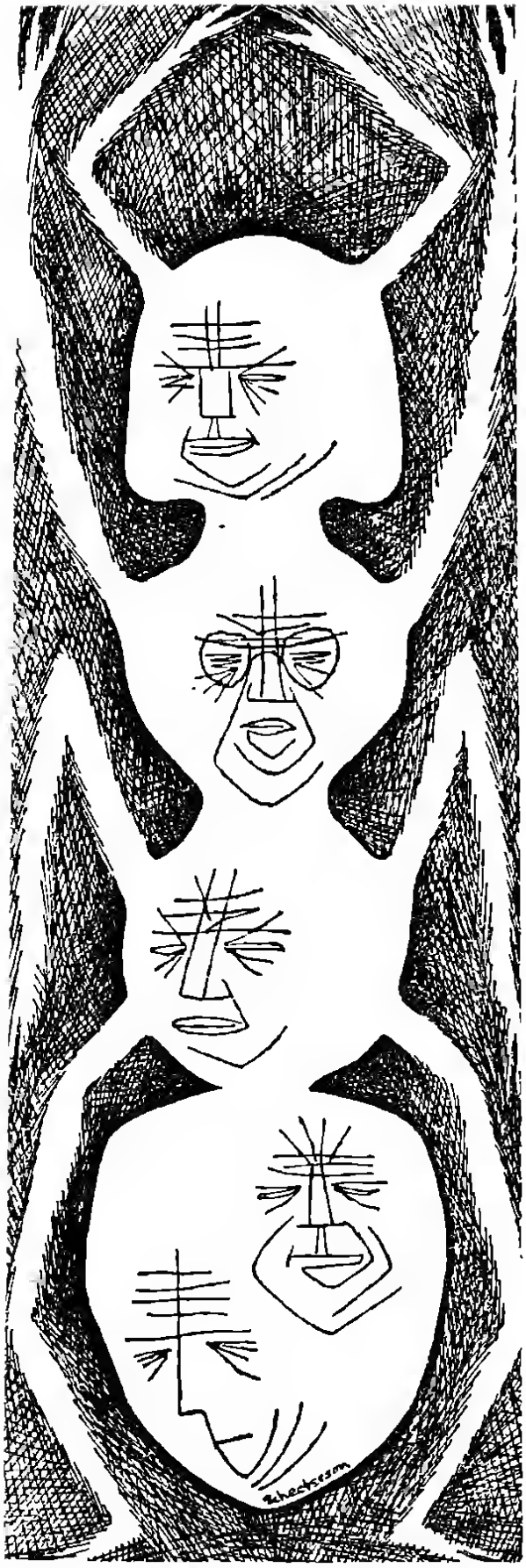
Buy it for your small-fry nephew unless he's space-minded already and a stickler for accuracy; if he is, wait for the second edition.

WINE OF THE DREAMERS, by John D. MacDonald. Greenberg, 219 pages, $2.75 • Psychiatry returns full circle to the devil theory in this tightly-knit science-adventure novel, first published in *Startling Stories* two years ago. Pointing to the incessant newspaper reports of persons afflicted with sudden homicidal insanity (see the first three pages of your local tabloid), MacDonald suggests a fantastic but almost water-tight explanation: Degenerate descendants of the extra-solar race which colonized this planet 10,000 years ago, using hypnotic thought-projectors originally designed for benevolent surveillance, invade our minds, force us to cruel or absurd acts for their own pleasure.

Also, obeying a law whose purpose is long forgotten, they sabotage our every attempt to achieve space-travel. This is the peg on which MacDonald hangs a plot which is routine but workmanlike, and occasional passages of mood-writing or social comment that are a little more.

Like all stories that postulate an extra-solar origin for humanity, this one neglects such thorny facts as homo sap's resemblance to Neanderthal, Piltdown Man, the anthropoid apes and other vertebrates not likely to have been carried along on a colonist's vessel. This is the only major flaw in the argument, though (a minor one: the number of the "Watchers"—800—is inadequate to account for all the damage they are supposed to do), and the careful, substantial detail-work is more than good enough to offset it.

MacDonald, a writer with an unusual combination of traits—industry and talent—has been selling heavily to the slick magazines and other highpay markets of late; this novel is probably one of the last science-fiction stories we'll see from him for some time.



Recognition

BY THOMAS C. PACE

ILLUSTRATED BY SCHECTERSON

The Aliens in their strange Ship were offering membership in a Galactic Federation. But it was hard to understand their message, and harder to see their reasons. In such a situation, mistakes were sure to happen.

The cabin was far more luxurious than usual for ultra-sonic military craft; the needle-bodied ship was the official plane of a man whose shoulders carried more than an ordinary amount of brass and braid. He was not, however, aboard at present. Five distinctly unmilitary men lounged about the padded, neat cabin. Any citizen, even without recognizing them individually—and they were of a caliber to make recognition extremely likely—would have tabbed them correctly as scientists.

In spite of their poses, they were as far from being relaxed as they were from being military. Their tension showed in the vigor and frequency with which two of them smoked and crushed out and lit cigarettes . . . the thin, youthful Sacco, who was one of the world's best

physicists, and the gray, ponderous Bramling, who had done more than any other man to reveal the secret of life, and had won a Nobel Prize for his work. Excitation showed in the manner in which the gaunt, balding, giant Mallinson—the psychologist and sociologist, the Mallinson who had guided the U. N.'s supremely successful Dublin Peace Conference to what bid to be a turning point in world history—turned and twisted in his seat, rubbed his knees with his great hands, and blinked out a window at the gray spread of cloud and earth blurring by thousands of feet . . . the first time any of the others had ever seen Mallinson restive.

Doiener, the tiny gnome who lived for mathematics, sat precisely straight in the rear of the cabin, turning his spare spectacles rapidly over and over in his hands. He had already broken his other pair, and the shards and bent frame lay unnoticed on the floor. He stared unseeingly at the others or at the quivering floor, his eyes opaque with concentration.

Notelsky, who was a profanely superlative debater, as well as *the* chemist, lay stretched his full length in a lounge seat, his eyes closed and his face unusual in peaceful immobility. But his hands shook when not folded tightly across his paunch, and his still face was redder with excitement than it had ever been in the years before, when he had worked days synthesizing compounds and nights compounding revolution.

The whisper of the jets, hurling their bellow far behind them, had become more painful than silence; and Bramling's voice cracked heavily against their tensions. "What does the ship look like?"

Sacco took time to answer, speaking through his cigarette fumes. "It . . . doesn't. That is, we aren't even sure it's physical, as we aren't about *them*. Take the way they speak . . . communicate. The ship . . . well, you're never sure of the shape, or even if there *is* a definite shape. Your impression is different from every angle, and every time you look at it. And the size . . . instruments don't agree with each other, or even with their *own* successive readings, on the mass and the shape."

Doiener was unexpectedly a basso, rumbling out of his reverie. "Nonsense, anyway. Do you now measure an equation or a concept with instruments?"

Bramling stared at him and back to Sacco. "That means they

aren't a life form as we would have postulated life."

Mallinson turned from the window. "No. We hardly see how they can even be material. Crushing to a biologist, of course. But you heard Sacco. And the Aliens themselves . . . well, no two viewers see quite the same thing, as with the ship. Two-dimensional squares of light of unrecognizable color, or multi-faceted translucent crystals, or ripples on fast-running water. *Without* the water." He chuckled sharply. "Sacco says they look like sounds. Never saw one myself, but it's an apt comparison. They're totally outside our range of experience . . . so much so as to be almost completely beyond our comprehension. I wonder what we, and our world, look like to them?"

Sacco was fumbling futilely for a match. Bramling bent toward him with a lighter, and grunted, "How did you communicate, then?"

"*We* didn't," said Sacco, nodding thanks. "*They* did, we think. Telepathy. Strong, but not clear. And not directed at any one person . . . they seem to have a limited understanding of individuality . . . as nearly as we can tell. And that, of course, is our biggest communication problem. Three-fourths of what we . . . hear . . . doesn't mean anything. We can feel it but not interpret it." He smiled. "Lord knows, it's difficult enough to be certain they *are* communicating, much less *what!* And then we can never be sure how well we are getting back to them, or just how they receive us. Yet they seem occasionally to be so clear . . ." He rubbed his forehead. "It can be extremely frustrating . . . we feel so sure, and yet not sure at all!"

"You seem to have gotten pretty far," said Notelsky gutturally, without opening his eyes. "After all, it has been only a matter of hours."

"Yes. As you know, military personnel got to them quickly after the first reports, and threw a cordon around the area and 'interviewed' them . . . involuntarily!" Mallinson packed a pipe with nervous tamping motions, hooked the curved stem in his mouth, and spoke around it and the match. "Some of the military lost all balance when the Aliens first attempted to establish communication. They fired at them—no effect evident, thank God!"

"It might have been suicidal," muttered Sacco.

Mallinson shrugged. "You can't blame the soldiers, of

course. The Aliens were evidently feeling for the proper medium of communication, and the first attempts seriously affected those in the area. Several went insane. Four shot themselves . . . when they discovered that they could not shoot the Aliens. But there hasn't been any of that since the first few minutes of contact. Neither Sacco nor I have been affected—"

"You hope," said Notelsky in the tones of a demure bear.

"We hope. And have reason to believe. At any rate, when things settle down, including the wild life which can evidently 'hear' them also—"

"What?" asked Bramling, alert.

"Yes. A herd of mule deer came tearing out of the woods, stampeded around the 'ship' . . . trampled one man, in fact. And a snake went into convulsions in the brush, right among the men, adding considerably to their confusion and panic, I imagine. Birds still show extreme excitement. Not too surprising. We've found indications of telepathy in animals, ourselves. Well, the gist of their initial 'statement' was, or seemed to be, that they wanted to communicate with our scientific leaders. Evidently theirs is a society governed by scientists . . . unless perhaps they are all scientists. The officer in charge of the troops sent word to the rocketry station—probably the most confused military communique in history!—and Sacco flew over. He called me at San Francisco before he left, and I joined him up there."

He puffed on the pipe. "What Sacco has said about the difficulty of interpretation is understated, if anything. It's rooted in subjectivity, I believe. In our inability to correlate this experience with anything we've known, experience or tradition or instinct. It takes quite a bit of dissociation . . . but with effort we think we have understood them correctly, and fairly fully." His eyes glowed, suddenly.

Sacco took up the narrative. "Yes. We were told, if that *is* the right expression, essentially what we have told you; that their study of us, evidently going on for centuries, has led to their conviction that now, only recently, we have reached a level of racial maturity making us eligible for contact with them, in their role as representatives of a loosely knit federation . . . this federation seems to embrace numbers of races as unlike them as they are unlike us . . . and covering, apparently, this entire section of our galaxy!"

He paused, even now seeming

stunned anew. Doiener lifted his head and dropped it again. There was silence, and above their plane the stars lay behind the deep blue of the sky.

"We reported to the Security Council . . . but we sent for you gentlemen even before we reported. We knew there would be no objection," Sacco finished.

"No," murmured Notelsky heavily, "there would not be."

Bramling smoked, hands locked together behind his head, looking at nothing. "Are you certain of their sincerity? Beings on their level would encounter no trouble in falsifying a mental communication with humans, though . . ."

Sacco spread his hands apart like an umpire signalling a safe slide. "You can answer it yourself. What else *can* we do but accept what they say as true? The only alternative would be not to accept it, and that would be unthinkable. We are, in that sense, on the blade of Occam's Razor!"

"Yes, you're right . . . the Stars . . ."

Mallinson cleared his throat. "All they have promised, that we can interpret, is information, acceptance, on a restricted level, of course, to the society—immeasurably great—to which they and other races belong; the decimation, we gather, of some life-forms which detract from our energies and productive power . . . I imagine we will be able to stamp out most of our diseases in the next decades! All this is not to be an outright gift, of course; we can see why. That would remove all incentive, cause us to stagnate intellectually. We must do our own work; they will provide directive hints, aid when such is needed. And eventually . . ."

Sacco, whose vocal inflection was normally his only dramaticism, stood up suddenly, one hand pointing, trembling slightly. "Eventually . . . *the Stars!*"

There was no more talk until the rush of the engines and of the atmosphere slowly deepened, and the plane slanted downward. Peering out as they strapped themselves into the seats, they could make out blue ragged mountains, and beyond them, a plain.

As they banked sharply, maneuvering to land on the miles-long slab of concrete at the rocketry station, Doiener looked up and asked, quietly, "Why?"

The question hung in the cabin. Notelsky and Bramling looked at each other. Sacco shrugged. Mallinson said slowly, "As I've said, we can't begin to understand how they think. I've

tried—and have only the faintest inklings, very probably totally incorrect. Maybe altruism; though what the concept means to them . . ."

Doiener was shaking his head. "I mean why is it they have picked us *now*, come to us? What is it we have done that has brought us up to their level, or at least to the level where they will now associate themselves with us? Are we, after all, now so much better, so much more intelligent, than we were a century before? Have we this much more promise? I wouldn't have thought so."

"Of course," said Mallinson. "We are, for one thing, at least able to live together in peace. To settle our disputes without violence, in large groups, as nations, as well as individuals. We have learned, or are learning, to fit our populations to our productive ability . . . and that simple step may yet prove one of the most valuable we have ever taken! We are beginning to grow emotionally and mentally mature as a people, as well as technologically expert."

Sacco nodded. "We've put up our satellite," he said. "Landed on the Moon and on Mars. *That* activity is most probably what has attracted their attention to us . . . and that attention has convinced them that we are now ready for provisional citizenship in their galatic culture."

They touched down roughly, rolling fast, braked with a jerking motion that sent puffs of smoke backward from the tires. They slowed, and approached the hangars. Doiener was silent, then; but as they stopped, rocking, and the heliocopter settled instantly beside them, he whispered gently, "I hope . . ."

He did not finish.

The five of them stood on the side of a slight rise, insensible to the cluster of uniforms and civilian dress on the top of the rise, and stared at the shifting incredibility of the "ship." Sacco and Mallinson, fully as bemused as the others, led the group slowly down the slope toward the shimmering, fading patterns—or sets of patterns. The eye could not quite grasp the structure, which seemed to alter as they moved slowly closer, to shift through perspectives that would require other senses than sight to follow.

And the Aliens were there.

The five men heard them speaking.

Bramling was white with excitement. Doiener, outwardly impassive, stared piercingly into the disorientation. Notelsky

shifted from one foot to another, scowling. Sacco and Mallinson stood side by side, slightly ahead of the others, their brows wrinkled in conversation. The cigarette fell unheeded, unlit, from Sacco's fingers.

They concentrated on the . . . voice . . . that whispered in their minds, fading in and out of their ability to comprehend, confronting them for the first time in their lives with something truly alien from humanity.

They fought down instinctive terror . . . the thing in their minds cowering in its cave from the dark unknown, its guardian fire gone out.

The voice stopped.

Sacco, by automatic consent the spokesman, stepped forward. He cleared his throat uncertainly, hesitated, and concentrated.

Doiener cried suddenly, shrilly, *"No!"*

"What . . ." They looked. Mallinson, gone gray, pointed with Doiener, who stood like a tiny statue, his mouth sagging, pointing.

At the ants.

A tide of ants, flowing restlessly under the hot sun, spilled down the slope some yards from them. Glittering in the sun, red ants and black. Moving slowly, to and fro. Tiny, million-strong.

Listening. And answering!

Through their contact with the Aliens, they could hear the voice of the Ants.

Mallinson recognized his own voice and stopped talking. His hand was clamped on Notelsky's shoulder. Somehow they were back on top of the rise. Sacco, his face twisted, stood beside them. Bramling was walking up the slope toward them, walking as if in a dream. Doiener sat below them, his chin on his hands, watching the ants move to the "ship" and disappear.

"Impossible," said Sacco, distantly.

Mallinson found sane words. "It's real."

"It's wrong! It *can't* be them! It has to be *us!*"

"Why?" Notelsky laughed, and had trouble stopping.

"They . . . they aren't . . . *We* are intelligent life!"

Mallinson had regained some control. "How do we know the Aliens' standards of intelligence? How do we know what, or even how, an ant . . . the ants think? When we don't even know surely what thought itself is? How can we guess what turning point, what ant-philosophy, what determining level reached by them called the Aliens' attentions to them?"

Bramling reached them. He paused briefly, and smiled gently

at them, his ruddy face a blank. Then he walked on, in a straight line, not toward the heliocopter and the huddle of white-faced men. He stumbled occasionally as he walked. Mallinson watched him go.

Sacco made a sound in his throat and began to shake. Notelsky suddenly slapped him hard, twice, across the face. "Frank!" he rumbled. "Get Bramling! Quick, boy, we need him, and he needs help!"

Sacco stood for a second, blinking, as reason returned to his eyes, and then he muttered, "Thanks." He ran loosely after the swaying Bramling, who was vanishing into the woods.

"Should we have known?" asked Notelsky.

Mallinson fumbled without looking at his pipe. "How could we? No more than we know what to do now. Dealing with ailenness, we couldn't even understand enough to realize that other species might be closer mentally to the Aliens. Maybe it's a mass-brain sort of thing . . . it would almost have to be, with the ants. But who knows? Not I." He raised the empty pipe to his face, looked at it. "I'll get Doiener. We had better leave."

"Do you think . . ."

"Danger? No." Mallinson smiled a smile as empty as the pipe, at the pale arch of the sky, as empty as he felt. "I don't think they know we're here . . . that we exist. And even if they do, why should they—either of them—bother with *vermin?* Vermin that are, finally, essentially harmless?"

Doiener rose to meet him. The little man's eyes were wet but steady. He even smiled. "So. Now we know how we stand, Scotty." They glanced back briefly, and walked away, Mallinson's head down. "There is one thing that may yet be a consolation," Doiener went on, softly. "Now we will have it all to do ourselves." He gestured up at the sky. "They don't want us. So we're on our own again. And we'll build our own future—up there."

Mallinson stared at him. Then he smiled . . . still emptily, but with something like the beginning of hope. "Thank God for you, Hans," he muttered. "I wonder how many of the rest of us you are worth?"

He put his hand on the little man's stooped shoulder, and they went over the crest of the rise without looking back toward the Aliens, and walked toward the heliocopter where the other humans waited.

THE PERSUASIVE MAN

BY ROGER DEE

ILLUSTRATED BY ORBAN

Persuasive was a mild word to describe him. He could charm hearts of stone and convince the toughest skeptic everything was his for the taking, and he was just the man to do the taking!

"Gaylord Joslyn," said Warden Lattimer of Terran Penal Detention over a half-empty glass of Martian *weef* juice, "was in his day a truly extraordinary swindler, the most fabulous confidence man that ever lived."

He squinted craftily at Rolph Carter across their table in the exclusive Patrons' Bar and pushed his empty glass significantly forward. Rumor claimed that the Warden still had his first credit note he ever owned, plus several millions more which he had chiseled from wealthy prisoners seeking parole, but he could always cadge a free drink and enjoy it. Carter sighed and signaled a waiter who brought a *weef* juice refill that cost the newsman half a day's pay.

"Naturally I came to know Joslyn quite well during the three years of his imprisonment," the Warden said. "But his full-amnesty discharge of yesterday makes it impossible for me to release official information concerning his record... there are regulations maintaining a citizen's right to personal privacy, you know . . ."

Carter did know. It was the politician's ancient and inevitable dodge of setting a price on his information.

"Terran Visicasts does not want official information," Carter said. "But we *are* interested enough in Joslyn after the latest newsbreak to offer you a thousand credits for a human-interest background on him. We want anything bearing on his personality index and psychological attitudes, any leads that might indicate the trend of future action after his release and subsequent—"

The Warden chuckled, a sound like rubbing a file on concrete. "You needn't trouble yourself

about Joslyn's future. His three years at Penal Detention made a new man of him—showed him the error of his ways. He's going straight, now that he's free."

The hell he is, Carter thought; then it occurred to him that Lattimer, if he had been long in the expensive isolation of the Patrons' Bar, probably had not heard the latest newscasts.

"Never mind the moralizing," Carter said. "Let's have what you've got. If a thousand credits isn't enough, I'll go elsewhere."

"The quality that made Joslyn so successful a swindler," the Warden said, "was his sheer *persuasiveness*. That came partly from his appearance, of course—he was always an eager little fellow with an earnest manner and the frankest face you ever saw—but there was more to it than just his looks. He was born with a sort of innate sixth-sense, something like a sensitive's knack of reading minds, that made men—and all kinds of odd, alien races as well—trust him absolutely.

"Convincing? Why, at eighteen he talked his way onto the passenger list of a Venusian transport and made his first planetary hop at government expense . . . it was on Venus that he pulled his first coup. He sold a salted uranium claim to a veteran syndicate assayer who had seen the gag worked a hundred times. Then he rooked a Terran tourist out of an expensive space yacht that boasted one of the first half-warp drives ever made and headed for the Sirian system, where Terran ships using that same half-warp drive were just opening up colonies. Our culture has grown so tremendously in the fifty years since that day that we've established colonies in every star system in the galaxy that spins a planet; Joslyn grew up with us, living off the fat of the galaxy and having the time of his life.

"He never swindled because he needed credits, but because he enjoyed it; he proved that by giving away most of what he stole. It was nothing for Joslyn to spend a whole solarian year setting the stage to hook an Altarian merchant for a cargo of rare gems and then skip over to the Capellan system and divide his loot with the farmers there. That's what kept him safe from Terran Police for so many years—the colonists looked upon him as a sort of space-era Robin Hood, and smuggled food and fuel to him when he was in hiding.

"In my quarters I have a complete, and unofficial, dossier on

Joslyn. I began it as a hobby, but—"

Carter interrupted, signaling the waiter to bring another *weef* juice for the Warden and a beer for himself. "Now we're getting somewhere, Warden. It's the unofficial angle that we want."

The Warden sipped his juice and smiled a private smile. "I started that dossier as a hobby, and ended with a fifty-year case history of Joslyn's career. Most of my information was unauthenticated, and so was ignored by the police as rumor, but from it I was able to form a clear picture of Joslyn and his psychology. A picture that, in the end, caught him in his own net."

Carter took out a telepad and made cryptic squiggles that registered on his office transcriber across town. "All right, what did you actually learn about Joslyn? What sort of person was he, really?"

The Warden permitted himself a smug look. "He was from the beginning a very ordinary little man with a peculiar gift of convincingness, but he had no real intelligence. He put his faith in the colonists he befriended, and they let him down—greed turned the trick, eventually. Did you know that at one time Terran Police had more than nine thousand operatives circulating through the galaxy on his trail, posting rewards? Joslyn must hove cached a hundred fortunes in his day, and there were many among his supposed friends who would gladly have reported him for a share of the loot.

"He was cornered finally at the home of an Antarean physicist who claimed to be on the track of the principle of instantaneous travel through total warping of space. Joslyn had been on a perpetual hunt for such a full-warp drive, hoping to escape our galaxy completely when the chase should grow too hot, but he never found it because none was ever developed. The staff of this Antarean scientist turned Joslyn in, and he left the system with Terran Police too hot on his heels to be shaken."

Carter looked up from his telepad. "Didn't he try to skip the galaxy anyway? There was a rumor to that effect."

The Warden tossed off another half-day of Carter's pay and pushed his glass forward. "An excellent proof of his basic stupidity. He tried to reach the Magellanic Clouds, a distance of some eighty thousand light years . . . an obvious impossi-

bility in a half-warp ship. He turned back after six months, half starved, and found the police waiting."

Carter put away his telepad thoughtfully.

"I'm beginning to see," he said, "how Joslyn could be pardoned after serving only three years of a life sentence. You had something to do with the parole board's declaration of amnesty, didn't you?"

Lattimer bridled. "While in Detention, Joslyn did a great deal of work for me, collating material contained in my dossier, and as a consequence I came to know him quite well. I took a liking to him, and, being qualified to make such decisions, I—well, I *did* recommend that he be given psychiatric adjustment and cleared. My recommendation was accepted, and Joslyn was freed, a changed man and reliable citizen."

Carter sat back and considered, ignoring the Warden's empty *weef* glass.

"I begin to understand something else," he said. "During the three years Joslyn spent at Detention you wormed out of him an admission that he *had* cached a fortune on some isolated world, and you got him released on condition that he recover the loot and split it with you. Am I right?"

The Warden swelled visibly. "Don't ever say that before witnesses, Carter—it implies bribery on my part and a corresponding moral laxity on the part of the parole officials. It could lead to a scandal suit that would ruin Terran Visicasts."

"It won't though," Carter said. He shook his head wonderingly. "I've an idea, Warden Lattimer, that you're waiting right now for Joslyn to dig up a half-warp ship. You spent practically your entire fortune getting him released, didn't you?"

The Warden's face was answer enough. Carter leaned forward, grinning in sudden anticipation.

"Did it ever occur to you that Joslyn's six-month goose chase toward the Magellanics might have been a dodge to gain time while he worked out the full-warp principles he picked up from that Antarean scientist? And did you know that a Terran physicist here named Orsham has been on the verge of cracking that same problem for months?"

His grin widened at the growing horror in the Warden's eyes. "Hadn't you heard on the newscasts that Orsham's experiment-

al ship disappeared early this morning, shortly after a visit from your *dull-witted* but convincing swindler? Surely you haven't been too busy counting your chickens to keep a close eye on him!"

Warden Lattimer stood up with a roar, smashing his *weef* glass without noticing. His face purpled dangerously.

"The thief!" he bellowed. "The lying, dissembling, unprincipled—Carter, by this time that little crook is halfway to some weird galaxy that Terran Police never heard of! We've got to get hold of that fellow Orsham and put another full-warp ship on Joslyn's trail before—"

Carter stopped laughing long enough to deliver his coup de grace, a pleasure which he would remember to his last day.

"Your persuasive partner—thought of that first," he gasped. "He talked Orsham into going along for the trip—and they took the ship plans with them!"

Some men can sell anything, and others—completely literate, smooth talkers, with pleasant personalities—couldn't sell gold at eighteen cents an ounce. It's one of the mysteries of the human race which has never been fully solved.

Unquestionably, something that goes beyond mere logic or fluency enters into it. Possibly it is related to hypnotism. In that case, we need a much better understanding of hypnotism than we now have. After all, it's been a long time since Mesmer worked with animal-magnetism while Cagliostro was apparently putting it to practical use. We should know a lot more about it than we do.

Possibly, it is really related to telepathy—the ability of the salesman to put out a sort of feeling of enthusiasm for his products which most good salesmen have, no matter how much they kid about what they sell.

In that case, we may have our "mutants" living with us right now. Maybe the ability to send brain-waves is pretty well distributed, and a lot of people have it to some extent. Maybe the man who can convince you that you should lend him your pen—when you know you'll never see it again—is actually a telepath, to some degree.

We'd like to find out more about it. The idea of selecting our best salesmen and trying to breed a stronger sense of telepathy into the race might be worth discussing. On the other hand, would we want to pick the best "suckers" and develop a stronger ability to read minds from those who can already transmit? Or do we have enough people with no sales resistance?

The 21st Generation

BY IRVING B. COX, JR.

ILLUSTRATED BY SCHECTERSON

War has always made strange allies, but none have been stranger than these new troops that were being set out from the Breeder Farms. Were they designed to take orders—or simply to take over?

The rear port in the plastic mound was jerked open and one of the leader-men threw in a basket of food and a dozen paperboard bottles of the fire drink. His narrow, pale face was silhouetted against the sun-red clouds of the twilight sky.

"Eat. Drink," he cried, shouting to be heard above the din of thundering explosions. "Then mate." He gestured toward the mouth of the tunnel that opened into the floor of the mound. "Go there to the females. Afterwards, be ready to obey."

He banged the port shut and they sat in silence. Martin held the food between his legs, doling it out to the others. It was his privilege because he was larger and stronger. Instinctively, he snarled and struck the tender part of Jerry's leg, as he reached out of turn for a bottle of the fire drink.

Jerry yelped in pain. With sudden incomprehensible compassion, Martin gave him the bottle and, after an awkward hesitation, he began to massage Jerry's leg where he had struck it. Why? A shapeless confusion flooded Martin's mind as he tried to understand his own emotion. Without taking any of the food, he swung himself up and stood apart from the others, thinking about the confusion.

For the first time he was hazily aware of himself. It was as if he had become two individuals, one active and unperceptive —the thing that ate, mated, and obeyed the leader-men; the other contemplative, standing apart and observing, seeking threads of a meaningful pattern in his actions, a reason why.

Martin's vocabulary was very limited; he knew less than a thousand terms. Now a burst of breathtaking ideas outstripped his terminology. He had a nebulous glimpse of a new world; it was impossible to keep it to himself.

Clumsily he began to talk to the others. After a time they put aside their food and listened. It was an intuitive communication at first, but as the ghost of the idea moved from Martin's mind to theirs, they began to find new words, half-remembered waifs, never used and almost forgotten.

They were still chattering, playing with the pyramid of dazzling idea-vistas, as they dropped into the tunnel and crept toward the adjoining plastic mound. The females minced out to meet them, but the established pattern was broken. The idea—the awareness of being—was loose, and it had to be shared. The females absorbed the strange, exhilarating excite-

ment and, as they symbolized their understanding, the vision became clearer to them all.

The port slid open and a leader-man peered into the mound.

"Mate now," he ordered. "You attack soon."

"I go Farm," Martin answered suddenly.

"Obey! Mate here."

These females meant nothing to Martin, for he abruptly remembered the bright face of Maria. She had been his mate at the Farm; he wanted no one else.

"No," he said simply.

He was surprised when the leader-man pulled out a weapon, leveling it at him. Martin's self-defense was instinctive. He reached up and jerked the man through the port, quietly twisting the pale, white face until he felt the bones break through the soft skin. He dropped the body on the floor and swung out of the mound through the open port.

Stupefied, the others looked on what he had done, chattering about it shrilly, until one of the females said vigorously, with a nod of satisfied understanding, "It is right."

They sprang up, then, and followed Martin, swinging awkwardly out of the plastic mound into the screaming, deadly night.

The radiophone buzzed and Conner picked up the receiver, pushing aside the psychological brief he had been reading.

"Emergency, Major Conner," the crisp, impersonal voice of the operator informed him. "Dr. Evans, calling from the Breeder Farm." The receiver sang with static—since the enemy always tried to jam the radiophone—but the connection was reasonably clear.

"Dan?"

"Speaking, Laurie."

"Can you come down here? Tonight?" Conner knew Dr. Evans too well not to recognize her undertone of anxiety, in spite of the crackle of interference.

"Something wrong?" he asked.

"I—I'm not sure."

"Want to brief me on it?"

"It's our new crop, Dan. They—oh, I don't know. You've got to see for yourself!"

"I'll make it official, Laurie; beam me in about midnight."

Since Major Conner was nominally in charge of the Farm, it was not necessary for him to arrange a special leave. He simply checked out on a regulation tour of inspection. He left the Center at sunset, piloting his own plane. No travel was entirely safe, but the danger of enemy interception was less after nightfall,

and the Commander had issued orders that no staff personnel was to move at any other time.

Rockets roaring, the slant-winged, black-painted ship shot skyward from the launching catapult, leveling off at twenty-thousand feet. Looking back Conner could see the semi-domed circular roofs of the Center lying like white bowls on the arid emptiness of the continental plateau. Had he been closer to the structures he could have picked out the pock-marks in the cement mementos of the countless enemy raids which had been made during the secondary phase of the conflict.

In Conner's lifetime the grandiose spectacle of the great air battles had dwindled away, just as the initial hydro-atomic raids had petered out at the start of the conflict. Both sides were forced to husband resources after a century of strife, and as a consequence the war was fought by slugging masses of infantry more or less stabilized on a line paralleling the mid-continental river.

Conner turned south. Eastward, glinting in the setting sun like a chain of teardrops, he could see the plastic mounds that marked the front. Occasionally he noted sporadic bursts of gunfire, but the general line of battle was unchanged, as it had been for as long as he could remember.

Unchanged — except at one point in the center of the line, the sector manned by the Farm: there, like a flood bursting a dike, the plastic jewels bulged out, spreading across the river in an expanding blister. There, too, the gunfire was continuous and violent.

Conner smiled to himself, as he always did when he noted new gains in territory. The enemy was falling back; his complete annihilation was now only a matter of time.

When the last enemy was wiped out, there would be peace. Conner turned the idea over in his mind, and found it without meaning. The old books told him of a time when there had been no war, but it was a strange world. Conner had no referent on which to build an understanding, and he had vague fears of his ability to adjust to it.

The war had passed through three distinct phases. It began with the period of hydro-atomic and biologic destruction, short-lived and disastrous, laying waste all continents save this, so that the other land areas were still, after a century, uninhabited. The survivors had fought

the great air wars, the chief purpose of which had been to prevent the rebuilding of the hydro-atomic arsenals. The growing shortage of fuel, and the futility of hurling non-atomic shells at the impregnible Centers, had abruptly ended the second phase and initiated the third, the conflict between massed ground troops. And there the fighting had stabilized when Conner was still a child, for neither side had sufficient manpower to mount a major offensive.

Conner was always amazed to read in the old histories how once three or four hundred million persons had lived and survived on a single continent. Now the total population of both sides did not exceed ten million, and the problem of feeding and clothing such a multitude grew annually more acute. Once the enemy was destroyed, of course, the resources of the planet, judiciously conserved, might meet the needs of Conner's people for a generation or two. It was the great hope of victory that science, freed from the demands of war, could devote its energies to discovering new food sources and new forms of energy.

As a major in the division of Biological Warfare, Conner himself had occasionally experimented with food economy. In some of the old periodicals which had chanced to survive the hydro-atomic destruction, he had read of plant life which had been grown in tubs of chemicals. He had succeeded in duplicating the experiment in his laboratory, but the process was impractical because a large scale application would call for quantities of chemicals which could not be produced even for military use.

The people of the other world —that old world of cities and peace—must have had a prodigality of elemental resources. No wonder they could build as they pleased, clothe themselves in such delicate fabrics, and waste so much time and material on ornament and luxury. There was a gulf between Conner's society and that which he could never bridge; it was a glittering wonderland beyond the limits of his imagination, the people as unreal, as steeped in impossible splendor, as the Jinns of Scheherezade.

And, to Conner, it was both awesome and terrifying, for those people, who had so much, had nonetheless started the war. They had invented and unleashed the hydro-atomic fires.

He knew their reasons and their arguments; he knew the things for which he was still fighting. But the knowledge was a jumble of words, ugly and senseless, patriotic cliches unchanged for a century. He still had never penetrated to a core of understanding; he still could not answer the one question of why.

In the darkness below his plane Conner saw the endless carpet of flat, brown earth, gray in the moonlight. On the horizon were the white circles that marked another Center, and behind them the enormous plastic sheaths over the protected food land. It was the customary sight, and in no way remarkable, but his mind was momentarily fixed on the past, and he remembered that once the earth below him had been green with growing things and lighted by hundreds of scattered towns and villages.

With a jolt he realized that it was now within their grasp to create that fairyland again, for Dr. Evans' Farm had opened up the fourth phase of the war, and the last. The manpower shortage was over. Conner's people had found an unlimited resource, and already the stabilized front line was broken, even before the Breeder Farm had reached full production. Within a decade—two at most—the last pocket of enemy resistance would be wiped out.

The victory had ironically been assured at the moment the conflict began, although no one then had been remotely aware of it. Oblivious of the war, old Dr. Haddon had gone on with his futile experiments, buried away in the tropical valley which the Foundation had given him. The radiation of the first atomic blast had done for the good doctor what all his years and skill could not have achieved through surgery and drugs.

The Breeder Farm Project was a carefully guarded secret. Only three persons on the Command Staff knew the details of the experiment. Personnel at the Farm, both scientific and military, as well as the men who commanded the Farm units at the front, were permanently isolated from all other contacts. For that reason, Dr. Evans had been unable to give Conner any real information on the radiophone.

With nothing to go on, Conner tried to guess her reason for calling him. It was pleasant to speculate that she had simply wanted to see him again, but Conner was too much of a realist to blind himself with

such dreaming. Not that he wasn't willing and interested but Laurie was a serious, dedicated woman, always anxious to talk of her work but thoroughly disgusted with any emotion remotely definable as love. Conner had no trouble engineering a series of sterile, aimless affairs with his office secretaries, but when it came to Laurie he had never made any headway. She would settle for nothing short of marriage—marriage with children—and she was honestly frightened of rearing a child for the kind of future he would have to face. Impotently Conner had sworn and begged and promised, and in the end he had grudgingly come to agree with Laurie; hers was fast becoming the fashionable point of view.

Laurie had followed established procedure in calling Conner. The Commander was to handle all questions of security at the Farm, and Conner of biology. Laurie had said it involved the new crop—roughtly speaking, the twenty-first generation after the original mutation. But what could have gone wrong?

The only genuine emergency he could visualize was a sudden drop in the intelligenee level of the new generation. And that was biologically impossible, since the change had taken place in the gene pattern and had become structurally hereditary. Recessive characteristies were unlikely to appear now, after uncontrolled interbreeding had already gone on for a century.

Quickly Conner ran over the story of the experiment, testing it for possible points of weakness. Back in the legendary world of peace, Dr. Haddon had begun his studies of behavior and learning. Setting up a colony of chimpanzees in a tropical valley which duplicated their natural environment, he had successfully taught them not only to respond to a variety of complex verbal commands, but to speak a few basic word symbols themselves.

The doctor had wasted the balance of his lifetime trying to push the eolony one step farther, to the threshold of reason and self-awareness. In spite of elaborate surgical experiments, he had never succeeded in planting a cerebral cortex in the skull of a chimpanzee. But when the valley was caught on the periphery of a hydro-atomic blast, the radiation completed Dr. Haddon's experiments for him, in the score of chimps which survived. For a century after that the colony had mated and bred, amusing

their military keepers with their bright talk and their willingness to learn. But no one had realized their military value until Dr. Evans took charge of the Farm.

The breed was a biological fluke—Conner always conceded as much—but there was no gainsaying the enormous potential of such a weapon. Conner had examined enough of the skulls, lying open on a laboratory table, to understand exactly what had happened to Dr. Haddon's chimps: the mutation caused by the radiation had created a cerebral cortex, and with a vengeance. Conner shuddered when he considered what might yet happen, if the colony ever reached the point of individual self-consciousness.

Laurie was level-headed and completely aware of the dangerous pitfalls. She limited the vocabularies of her charges; she restricted their education to a pattern of useful, basic habits; she taught little beyond absolute obedience to a few, simple, spoken commands; and she took pains to create a compatable, functional environment. They were an expendable infantry, developed for the one purpose of winning a war. They were never permitted to become conscious of any other situation. Dr. Evans took great pride in the fact that, on weekly I. Q. tests, her chimps made a consistent average score of 75. After the victory, the survivors of the colony would have to be liquidated; if the problem were properly handled, no one would ever need to know the potential dynamite that could have developed at the Breeder Farm.

Conner turned over the whole history in his mind, and saw no point where it could have gone wrong. He and Laurie had worked out every probable development and a solution for it before she took over the direction of the Farm.

There was even a way out of the ultimate possible disaster. If the I. Q. tests failed to show up the upper deviations, if isolated cases escaped Dr. Evans' personal detection, if a group of the chimps ever attempted to organize a revolt, Laurie could destroy the entire colony with a flick of her wrist. Every twenty feet of the circumference of the valley was heavily mined, and the mines were radio-controlled by a thick, metal band which Dr. Evans wore on her wrist.

Nothing could have gone wrong! Conner was sure of that. It was impossible. Then why had Laurie Evans called him?

Suddenly, from below his plane and to its left, a tiny, frontline fighter darted up. Conner maneuvered frantically to avoid a collision with the smaller ship. When he leveled off again, he could see the plane far below, bobbing back and forth as if the pilot had lost his way.

Furiously Conner picked up his radiophone.

"Major Conner to fighter! You crazy fool, what are you doing out here? Get back to the front."

He waited but there was no response. Slowly he was leaving the smaller plane behind him. He took up the radiophone again.

"Fighter pilot, I want your name and destination. Name and destination!"

After a long silence, a voice answered faintly, "Go Farm. Go Maria."

"What is your base?"

There was no answer. Conner repeated the question, but by that time the strange plane was so far behind it was lost in the darkness. He wondered if he should go back and force the ship down, but thought better of it. The time would be wasted, and he had promised Laurie to come in by midnight. In any case, the pilot would be properly reprimanded when he returned to his field, and there was nowhere else for him to land.

But the response of the pilot troubled Conner. No one was permitted to go to the Farm. Only a very few officials knew its actual location. He wondered if the plane could have been piloted by one of Laurie's chimps, on a training flight, but she never allowed them to stray so far from home. The more he considered it, the more it puzzled him.

An hour later he picked up the beam and began to glide in smoothly toward the valley.

The earth below him had become overgrown with vegetation. At the time of the hydro-atomic destruction, the area had been sparsely settled and a poor target for extravagant weapons. Nonetheless, in the secondary period, when military objectives had given way to unplanned vindictiveness and revenge, an occasional atomic shell had been hurled into the lush, jungle waste. The great forests had burned and the small things had died, yet in time the earth had turned green and fertile again. The sight of it always gave Conner hope for the fields of his own land. When peace came and the chemists had time to study the earth, they might discover

the secret of restoring life to the soil.

Conner's plane crossed the rim of hills and dropped toward the landing field. Small, hidden, and forgotten, the valley had suffered least in the early destruction. The raging fires had burned themselves out against the naked hills, so that even many of the ancient trees within the valley were still standing and alive. To Conner it was always a breathtaking sight, like a picture torn out of one of the old books and given life.

The landing field was at the head of the valley. Beyond it were the low, rambling, yellow-walled houses for the staff, and the experimental laboratories. The rest of the valley was occupied by the breeding pens, mile long chains of brightly lighted rooms. The training ground spread up the slopes of the hills. There, with plastic mound houses, realistic barriers, and rounds of live ammunition, the corps of young chimps learned their business of war.

Chimpanzee mechanics scurried out of the hangar to pull in Conner's plane. Laurie Evans and her Chief Medical Assistant, Jim Reeder, met him as he climbed from the cockpit. As always Laurie was cool and serenely lovely in her official, white smock, her short hair shining like fine-spun silver in the moonlight. Reeder, too, never seemed to change, a slouched, baggy, sallow-skinned, old man, forever in need of a shave. It was the beauty of the valley and its consistent air of changelessness that made it so attractive to Conner. This was peace as he would have defined it—the only peace he knew, thriving in the breeding ground of war.

Laurie held out her hand and smiled.

"You're right on time, Dan."

"And on a wild goose chase, too," Reeder added sourly.

"Let's hope that's all it is!" Laurie said.

"Can I tackle it tonight?" Conner asked, slipping his arm around Laurie's waist. But she turned deftly away and stood facing him again.

"I hoped you would," she said. "I have one in the lab now."

"One!" Reeder snorted. "It's been the same chimp from the start. The trouble with you, Laurie, is you can't tell them apart."

"And you can, of course, Dr. Reeder." Her voice was cold and she put a nasty emphasis upon the title. Reeder laughed easily, but he said nothing further.

They left the hangar and

walked toward a lighted laboratory building, pausing to watch a company of smartly uniformed chimp infantry swing past on their way to the training ground.

"They look pretty good," Conner commented.

"They ought to," Dr. Evans replied. "They're going up tomorrow."

As they entered the white-walled laboratory vestibule, a short, stooped chimpanzee nurse rose to greet them. She wore two shell combs in her hair, a pair of horn-rimmed glasses, and a white smock which was a miniature of Laurie's.

"Dan, this is Maria." Dr. Evans introduced her affectionately, patting the chimp's head gently. "The best nurse in the valley; I don't know what I'd do without her."

"And you must be Major Conner," the chimpanzee said, holding out her hand. "Dr. Evans has told me so much about you!"

"Maria used to be in charge of the incubator rooms," Laurie explained, "but she did her work so well I transferred her to the laboratory."

"It's been a very exciting change," Maria said coolly. "I've learned a great deal."

Stupefied and strangely embarrassed, Conner was at a loss for words. Desperate for something to say in the lengthening silence, he at last pointed to Maria's glasses.

"You must—you do a great deal of reading, I suppose, Maria?"

"As a matter of fact I do, Major. But the glasses, I must confess, are an affectation. You really shouldn't pry into our little vanities, Major!" Her laugh was a perfect imitation of Laurie's; Conner's spine ran with an unaccountable loathing.

"Maria has a special interest in our patient," Laurie pointed out. "He's one of her own offspring. Will you go in and see if he's awake, Maria?"

"Of course, Doctor."

Conner was alone with Laurie and Reeder in the vestibule. He turned on them angrily.

"If this is what you wanted me to see, the answer's obvious. Get rid of her at once; now!" He felt for his revolver. "If neither of you has the courage to do it—."

"What in the world are you talking about, Dan?"

"Maria's language! Her reading! You know what can happen."

"But just one of them, Dan? Don't be foolish. I wanted to see what I might do if I gave

one of them a real education. It's harmless. Last week she scored 200 on her I. Q. and she's still learning."

"Harmless! Do you think she won't talk to the others, tell them what she's learned?"

"Maria depends on me for everything, Dan. She wouldn't know how to begin, even if it did enter her head to make trouble. She's actually afraid of the other chimps. I've heard her call them filthy beasts."

Conner threw his hands up helplessly and said to Reeder, "You knew what was happening. Why didn't you stop her?"

"Frankly, Major Conner, it was my idea. Laurie was getting so restless and impatient with everything, I thought it would be a good thing if she had a woman to talk to."

"And it's worked out wonderfully, Dan," Laurie put in. "My work seems so much easier and so much more worthwhile now."

"Reeder, you've examined their brains on the operating table," Conner persisted stubbornly. "You know what kind of a cortex that genetic fluke created. Give them half a chance, and they'll run circles around us in five years. They could take over the planet!"

"As far as I can see, Major, the genus *homo sapiens* is gasping its last," Reeder responded calmly, "when it forgets how to make peace, and has to train chimps to fight its wars."

Desperately, his hands dripping sweat, Conner snatched Laurie's arm, pushing back her smock sleeves to find the metal band that controlled the mines ringing the valley. Taken by surprise, Laurie almost allowed him to snap the control dial before she had the presence of mind to jerk her arm free.

"Don't be melodramatic." Her lip curled with the slash of her voice. "I thought you had better sense, Dan."

Maria came to the door, then, and said, in her quiet voice, that the patient was ready to see them. Speechless, fighting a rising fear, Conner followed the others into the main room of the laboratory. There, in a large cage behind the white tables, he saw a single chimpanzee, full grown and stark naked, swinging happily on a gleaming, metal trapeze. Conner was so used to seeing the chimps clothed in their various uniforms, he found it both disturbing and disgusting to look upon one so mentally deranged that he chose to display himself unashamedly naked.

The chimp was just reaching maturity, vigorous, virile, and

beautifully formed. When Conner reached into the cage to take his pulse, the animal bared its teeth savagely and snapped at him. A moment later the chimp shot around the sides of the cage, clinging to the roof bars by his feet and scratching his armpits while he shrieked shrill nonsense at the human intruders.

"It's regression," Laurie explained. "Complete regression to savagery, and it's happened over and over again with the new generation. Sometimes we have twenty or thirty of them in here at one time."

"Do they get over it?" Conner asked.

"It never lasts more than a month."

"How are they afterwards?"

"Entirely normal. They have no recollection of what happened, and none of the symptoms recur. As a matter of fact, all of the group we're shipping out tomorrow have gone through it, with no ill effects."

"Have you made a surgical examination?"

Reeder coughed hesitantly. "I've put that off, Major. You know, when we open up the brain, the operation is usually fatal. We're so hard-pressed to step up production right now—" He paused, shrugging his shoulders. "I hated to sacrifice even one of them without authority."

"That's why I called you, Dan," Laurie put in.

"And a good thing; we'll look into this boy's head tomorrow morning and find what's up."

"It seems foolish," Reeder said. "They get over it. We'll be wasting a manpower unit simply to satisfy our curiosity. We can't be really sure it's happened to more than one of them. I've a theory, Major, that one of the chimps has a genuine neurosis. He's frustrated; he can't face life, so he's escaping into the past. Like any neurotic, he has periods of normalcy. We think he recovers and we release him. A week or so passes, and it begins over again. We can't tell the chimps apart; so we think we've picked up another neurotic."

"Laurie said you had as many as thirty of them in here at one time."

"All young bucks, about a year old, before we've started teaching them their vocabulary. Suppose they saw neurotic acting up. They're childish enough at that age to enjoy imitation. We bring them in here and in a couple of weeks they mature enough to grow tired of the

game, so we think they're cured."

Maria had been standing respectfully in the background. She stepped closer to Conner and interposed softly, "I'm inclined to agree with Dr. Reeder, Major. We're dealing with a form of mass hysteria."

"Oh?" Conner's eyebrows arched. "What do you suggest, Maria?"

"An operation now would be unwise, when we need all the units at the front. Perhaps we could give this one a sedative, and then try therapeutic hypnotism later on—in the morning, when he's calmer."

Conner shot a glance at Dr. Evans, and discovered that she seemed to approve Maria's proposal, so he checked the retort he would have made and said very carefully, "Naturally I'd prefer a cure, Maria, but I think you understand what's worrying me."

"Indeed, yes. You're afraid the regression might be caused by a physical deterioration of the brain." She bared her teeth in what he took to be a smile, and adjusted her glasses with a nervous gesture. "If the next generation should revert entirely, you would lose your manpower superiority at the front. Really, Major, I'm sure you should have no fears on that score. The original deviation is permanently established in the species."

I. Q. 200, Conner thought, fervently hoping she did not understand any better than that the conclusion he had reached. As nonchalantly as he could, he said, "Give him a sedative, Maria; I'll look him over tomorrow."

Laurie passed her arm through his. "I have your old room ready, Dan."

The wall radiophone buzzed. With a frown of annoyance, Dr. Evans answered it, listening carefully and replying now and then with monosyllables. When she finished, she picked up the Farm local.

"Lieutenant?" her voice was crisp and business-like. "They're asking for emergency replacements at the front. Will you send out the new shipment at once?" There was a slight pause, during which she tapped her foot impatiently. "Yes, now; get them off in ten minutes, if you can." Another pause. "Of course you'll have to use the transport planes; this is a rush job."

When she hung up, she said to Conner by way of explanation, "There's some sort of trouble at the front; the con-

nection was so poor I couldn't make out exactly what was wrong. But I'm sure it's nothing that a dose of reinforcements can't cure." Her smile was grim and determined, very unlovely.

Maria joined them at the laboratory door and walked with them to Laurie's living quarters, set apart from the other buildings by a copse of trees heavy with trailing vines. It was one of the original cottages, built in Dr. Haddon's time and spared in the fringe of destruction that had brushed so lightly over the valley.

To Conner it was a wonderful house, both weird and beautiful. The spaciousness, the multiplicity of rooms, impressed him most. He understood no other kind of living accommodation except the single half-room he and his family had lived in while he was growing up, the community eating rooms of the Center, the community kitchens, the community baths. Quarters in the Center naturally had to be crowded, because of the limited building material; and survival outside was impossible. He looked upon privacy—particularly a large sleeping room that was entirely his own—as something unmentionably sensuous. He enjoyed it tremendously, and yet it always left him with a feeling that he had done something vaguely wrong. The quiet, the delightful aloneness, the uncluttered waste of space were secret pleasures that equated somehow with sin.

He never talked about Laurie's house to the people he knew at the Center; he was afraid he would betray his own longings. But he looked upon the house as another index to those people of the past, that fairy tale time of peace. They had had so much, and yet somehow they had plunged the world into eternal war. Why? Over and over the question echoed in Conner's mind, and nothing gave him a satisfactory answer — neither the books that recorded their history, nor the surviving relics of their lives.

They lingered for a pleasant ten minutes in Laurie's living room while Maria made them a round of cocktails. Then Dr. Reeder went off to his own cottage, and Laurie showed Conner to his room, bringing him clean towels and soap and a fatigue uniform he could put on in the morning. Maria's room was across the hall, and Conner had a glimpse of a pink-quilted bed and a crowded bookcase, before the little chimp decoriously shut her door quietly behind her.

"Now you listen to me, Dan," Laurie said: "I want none of your philandering with my nurse. Little Maria is too serious for that sort of thing; she's decidedly not your type."

What shocked Conner was that Laurie spoke so much in earnest!

Conner knew, then, that the thing he had decided upon was the only solution; further, he would have to do it alone. He could count on no help and very little understanding from Laurie. When he was alone in his room, he lay tense and sleepless, watching the clock. He would have to wait half an hour, to be sure the others were asleep.

He listened to the birds in the trees outside. Nowhere else could he hear the song of a bird, or see a real tree, and they gave him another incomprehensible clue to that ancient world of peace. In the distance, at regular intervals, he heard the drone of the transport planes as Laurie's emergency shipment was rushed to the front. After a time, the night fell quiet again.

There was a long interval of silence before he heard another airplane. It circled the valley, the engine firing fitfully, as if it might be short of fuel. It came so close to the roof of the house that the walls shook; a small mirror broke free and shattered on the wooden floor. The sound of the plane receded again and the night was silent.

Conner was sure the plane had landed, rather than taking off; probably one of the transports had returned because of motor trouble.

The thirty minutes passed. Conner drew on his fatigue uniform, stuffing the revolver into his pocket, and opened the bedroom door. Without shoes, he walked to Laurie's room and, inch by inch, pushed her door open. Her smock lay folded over the back of a chair. Stealthily he picked it up, feeling in the pocket for the laboratory keys. Twice on his way out floorboards creaked, and he froze, holding his breath. The second time Laurie turned and muttered in her sleep, but she did not awaken.

Outside, Conner put his shoes on and, keeping to the shadows, made his way to the laboratory. A footstep crunched on the gravel behind him, and Conner clung to the trunk of a tree. A chimp, in the battered uniform of an infantryman, swung toward him.

"Leader-man, where nurses?" the chimp asked respectfully.

"Are you hurt?" he asked.

"No, I Martin."

Impatiently the chimp moved off toward the breeder pens, peering into the windows and calling a name Conner could not quite catch. Conner chuckled a little. The poor chimp was probably feeling his oats and looking for a mate. Perhaps one of the nurses had made a date and, aping her human sister, stood him up at the last minute. Poor Martin! He was still young; he had a lot to learn. Maybe the chimps were lucky to be sent off to the front and oblivion before they had to learn too much.

Conner went to the laboratory. He tried to fit the key he had stolen into the lock, but he found the door was already open. He swore futilely at Laurie's carelessness, and pushed inside.

Then his breath caught and he felt for his revolver, drawing back the safety catch. There was a faint light in the room beyond the vestibule, and he heard voices. One was Maria's.

". . . don't know about this Major Conner," she was saying. "We'll have to go easy while he's here."

"If I get out, I can warn the others," a gruff voice answered, "But Conner may still want to operate. I don't like it."

"I think I've talked him out of that. You let him cure you with hypnotism in the morning. But be careful with the words you use. He can pick you up there if you make a single slip, Robbie."

Conner moved to the door. Inside the laboratory he saw Maria quietly talking to the chimpanzee in the cage. The door was open.

Conner raised his revolver and would have fired, but he was afraid he might only kill one of them and it had to be both. Another strategy occurred to him. Calculating the angle and the distance carefully, he leaped across the room. Striking Maria by surprise, he tumbled her against her companion's feet, and both of them rolled into the cage. The only casualty Conner suffered was minor: the little chimp bit his hand as he snapped the lock on the door. They stood glaring at him. Suddenly Conner burst into uproarious laughter.

"Chimps with the I. Q. of a genius," he said, "and you let a mere *homo sapiens* get the better of you."

"Yes, you have us," the male said, with peculiar emphasis.

"Hush, Robbie!" Maria told him reaching for his hand.

"You've saved me time. Maria,"

Conner said mockingly. "After I took care of our mutual friend here, I had intended to dispose of you with a hypodermic. Now you've given me a chance to show Laurie what's up first."

Conner called Dr. Evans on the Farm local and peremptorily ordered her to come to the laboratory. While he waited, he drew on a surgical gown and carefully laid out instruments in the sterilizer beside the table, whistling to himself.

"What do you intend to do, Major?" Maria inquired. "You must realize, surely, that a surgical examination is unnecessary. The regressions are entirely fakéd."

"It's difficult to give up self-awareness once you have it, isn't it?"

"And pointless," Maria added.

"There isn't room on the planet for two separate, reasoning species."

"Judging from your human actions," Robbie put in, "you don't really believe there's room for one. You humans invented war to kill off your own kind."

"And if the chimps had been in our place, all would have been peace and brotherhood, I take it?"

"We have only scattered data on which to base our ideas—"

"A long time ago," Conner cut in, "Dr. Haddon tried to make a cerebral cortex inside your skulls and failed. Medicine can't do much to create what isn't there." He paused, holding up a scalpel to the light and blowing thoughtfully on the gleaming blade. "But the surgeon is quite capable of cutting away an organ which has become—ah—superfluous."

Outside the laboratory they heard the faint voice of a chimpanzee calling hoarsely. The name on his lips was "Maria." The sound trailed away as Dr. Evans stormed in. She listened to Conner's explanation with obvious disbelief.

"You'll take orders from me until this mess is cleared up," Conner said curtly. "After that, all complaints will be welcomed by the Commander."

"You have the authority, Dan, but this can't be as serious—"

"I'll worry about that. I want you to round up every chimp who's been in here with a breakdown. Get Reeder to anaesthetize them and line them up on the tables. I'll rip half the brains out of every last one of them. If any happen to survive, they go to the front. If not, good riddance."

"I'd oblige if I could, Dan, but most of them were in the ship-

ment I sent up last night. I suppose there are fifty or so left in the breeding pens, if they'll satisfy this whim of yours."

Conner reeled back against the table, staring at her. In the silence he thought it was Laurie who laughed, but it was Maria, swinging comfortably on the trapeze in the cage. She turned a loop in the air, landing on her feet by the door.

"You could call the front, Major," she suggested, "but I imagine it's too late. Think of it! A thousand of them loose among all the others. It creates an intriguing situation." After a silence she added, "I dare say you want to know how we did it, Major—you humans are so insatiably curious. It's quite simple. They came to the laboratory in relays. At night I talked to them and read to them—taught them enough to begin their real education, make them individually aware of themselves as persons. They've the brain potential to finish the job without help. The process of reason—the fact of self-awareness: they're like disease germs, and now we're spreading the epidemic to all our people."

Dr. Evans felt slowly for the metal bracelet on her arm. Her face was pale, her lips thin and bloodless, stretched tight across her teeth.

"An hour ago you told the Major not to be melodramatic," Maria said softly. "I suggest that you don't want to be disillusioned, Dr. Evans."

"We have the breeding pens here," Laurie answered, her tone emotionless and trance-like, "and forty thousand of you not fully matured. These I can destroy. The rest are a handful; my people can dispose of them!"

There were voices in the vestibule. Jim Reeder, looking seedier than ever in a dilapidated, woolen robe, came in, leading a frightened chimp infantryman.

"This fellow's been prowling around the houses," Reeder explained, "looking for Maria, he tells me. Some sort of an assignation, I suppose. Never knew they had so much romance in them."

"Martin!"

The chimp cried with joy and ran toward the cage.

"The twenty-first generation," Maria sighed, wildly triumphant. "They needed no prodding, Robbie; they've come to it themselves!"

"I took him over to your house, Laurie," Reeder continued blithely, "but no one answered, and I thought—"

"Stop him!" Conner cried

leaping toward the cage, but the chimp turned on him with bared fangs and flung him against the wall. Dazed, he staggered to his feet. Cooly Maria began to issue a volley of orders. The chimp listened and obeyed. With a sweep of his foot he smashed the lamp before he sprang at Reeder's throat. Conner heard Reeder's keys fall on the floor as the chimp ripped them from his pocket and hurled them to Maria.

Conner found Laurie's hand in the seething darkness and pulled her with him outside. In the moonlight she found the radio control on her bracelet and turned the dial, holding fast to Conner's hand as they waited for the shattering explosions to overwhelm them.

Conner awoke slowly. The chimpanzee in the starched, linen uniform stood just beyond the bars, pulling at his shoulder gently. Conner's mouth felt dry, his face matted with a heavy beard. His clothes clung to his torn skin in tatters.

"Water" he whispered. "Water, please."

"Ah, the delirium passes," the chimp said with satisfaction. "We'll have you on your feet in no time, Major Conner." He signaled to a nurse, and she reached through the bars, jabbing Conner's arm with a needle; the blackness welled up around him again.

When he opened his eyes, he lay beneath a clean, white sheet. His skin was healed; his face was clean and smooth. His eyes focused again on the chimpanzee in the linen suit.

"You shouldn't have tried to run away, Major," he said. "And certainly you should have had sense enough to realize that we had decommissioned Dr. Evans' radio-explosives before we made our other plans. Do you know, Major, we had to track you for three weeks in the jungle, before we found you? You were exhausted and raving with fever when we brought you in."

"Laurie?"

"The female? Much better. We're trying to find her a mate so we can keep your species alive. There aren't many of you left, I fear. You won't do for her, Major; there's something else—far more important—that we hope to learn from you."

The chimp backed away then, and Conner saw the operating table and the nurses waiting behind him. Conner was too weak to rise; he guessed that he had already been given an initial anaesthetic.

"Your people have left us

many things," the chimp went on, as he scrubbed his hands in the antiseptic, "for which we are very grateful—your language, your numerical symbology, your science. Your code of ethics, too; though you seldom applied it, we find it quite workable. All chimps are brothers: it seems both commonplace and obvious." He raised his hands, allowing the liquid to drop back into the agate pan. "And there, precisely, Major, is the point where I think you can help us. What I want to discover is the exact failing in the human brain that made you sacrifice your lives and your resources for the sake of annihilating your own species." He picked up the scalpel and examined it under the light. "What drove you to slaughter yourselves? If we can discover that, we can learn to avoid your fatal error. Perhaps we chimps may yet make a civilization out of the wreckage you leave us. It's a hopeful sign, I think, Major, that Martin's first emotion of self-awareness was an act of compassion; I wonder if yours was savagery?"

He gestured again to the nurse, and the anaesthetic cap closed down over Conner's vision.

Men hove been blaming women too long for oll the ills that con beset the roce, and it seems thot science is now obout to crock down on their superiority. Little by little, we've been finding that the humon mole isn't built perfect, ond incapoble of hoving flows.

In the old doys, and right up to the present, men coulld get o divorce on the ground thot their wives were sterile.In vorious ploces, they could divorce a wife who "refused" to have sons. They took it for granted thot the fault must be the womon's. Sterility wos obviously o femole fault. And the lovely, mole-designed theory arose that the woman controlled the sex of the offspring; one ovory produced mole ovo, the other female ovo.

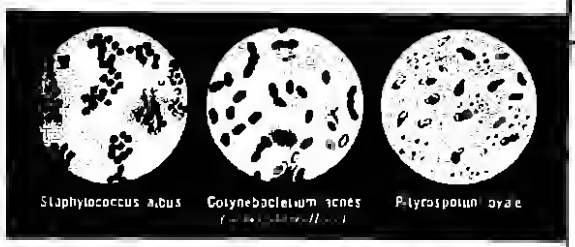
Science says it just isn't so. The mole is the sole determiner of the sex of the child. The female egg hos nothing to do with it. There is a chromosome in the sperm cell which matches one in the ovum, but unlike the femole cell, this con be either on X or o Y chromosome. All the femole chromosomes ore X; ond without a Y, the result will alwoys be female.

Also, it seems thot about 10% of oll men are sterile. In addition, the mole sperm cells ore peculiar little things; it takes millions of them to fertilize o single ovum—less than obout 60,000,000 viable ones will rarely produce fertilizotion. They are subject to weakening from fatigue, nerves, ond temperoture, as well as a thousand other factors. And generally, it's a wonder ony men are fertile.

If there aren't twelve husky male children in your family, better not blame your wife. She might prove it was your fault!

NEW MEDICAL EVIDENCE SHOWS HAIR CAN BE SAVED!

Hair-Destroying Germs Disclosed



Shown above are germ organisms believed by many leading medical authorities to cause seborrhea and dandruff that may result in hair loss and eventual baldness.

"Kill these scalp germs," say these doctors, "and you remove this *cause* of itchy scalp, dandruff and seborrhea, ugly head scales and unpleasant head odors — and stop the hair loss they cause."

LABORATORY TESTS PROVE GERMS KILLED BY SEBACIN

Exhaustive tests* made by a nationally-known impartial testing laboratory prove conclusively that Sebacin KILLS ON CONTACT all of the hair-destroying bacteria named by leading medical authorities as a significant cause of baldness.

Sebacin was tested on cultures of staphylococcus albus, corynebacterium acnes and pityrosporum ovale on 1-minute exposures. The test method was the F.D.A. wet filter paper method described by the United States Department of Agriculture.

Sebacin killed the test cultures on contact.

**Report No. 6967, May 31, 1949*

MEDICAL AUTHORITIES BLAME GERM INFECTIONS FOR COMMON BALDNESS

Washington, D. C.—New hope was offered to men and women suffering from the age-old problem of baldness, in recent testimony here by leading dermatologists.

In revealing statements, it was disclosed that specific bacteria are invariably found in seborrhea and dondruff, and may be the *cause* of these scalp conditions which result in baldness! The dangerous scalp bacteria named were the staphylococcus albus, the microbacillus or corynebacterium acnes, and pityrosporum ovale.

In reply to direct questions, the medical authorities agreed that,

1. At least 50% of doctors and dermatologists experienced in treating hair and scalp disorders are convinced that seborrhea and dandruff are an important cause of baldness.
2. This baldness may be *prevented* if seborrhea and dandruff are controlled.
3. The bacteria staphylococcus albus, the microbacillus or corynebacterium acnes, and pityrosporum ovale are invariably found wherr seborrhea is present and are considered to be its cause.
4. An antiseptic containing b-hydroxynaphtholene, sodium phenosulphonate, cinnamic acid and other specialized drugs can and *will* kill these germs.

This impressive testimony by competent medical doctors now made public for the first time, offers renewed hope for the treatment of sick scalps and the prevention of baldness.

TESTED AND PROVED by men and women all over the U. S.

"Like many others, I had very little faith in your product, but after using it I can honestly say I was amazed, for it has done wonders for me and I assuredly recommend your product to anyone with failing hair."
A A.—Oakland, Calif.

"My husband has used a bottle of your formula and it's done wonderful results for his scalp and hair. So I'm scoring for the treatment for myself."
Mrs V A.—Hannibal, Mo.

"On January 28th, I received my scalp treatment and that evening I got busy with it. From the first application and up to this day I have had no itchy scalp. And I cannot comb a hair out."
R.S.—Pittsburgh, Pa.

"Have tried many hair tonics, but your treatment is the only one that has proven satisfactory."
C.S.W.—Lynchburg, Va.

"Got rid of my dandruff."
R.H.McD.—N. Kansas City, Mo.

"Had despaired of ever having normal head of hair again. Getting wonderful results from your treatment."
Mrs. M.B.—McKean, Pa.

"Stopped my scalp itch and been wonderful for my scalp."
A.R.—Belle Fourche, S. D.

"Received great relief from itchy scalp and dandruff from your treatment. I find it has stopped my falling hair."
A.K.—Randolph Field, Texas

"My hair seems to be growing since I started using the treatment. People around here have noticed the recent results. I'll tell you it's wonderful."
Mrs. J.R.—Jacksonville, Texas

"I am sure delighted and really satisfied with the results. My dandruff and falling hair have stopped altogether."
J.T.—Stockton, Calif.

Beware of these 5 danger signs

Neglect May Lead to Baldness

1. **Over-dryness of hair and scalp**
2. **Scalp itch**
3. **Hair loss**
4. **Dandruff or seborrhea**
5. **Excessive oiliness of hair and scalp**

Most people lose a few hairs daily. This is no cause for alarm as they are immediately replaced by the normal, healthy scalp. However, when you see any or all of the danger signs listed above, it is often a warning of scalp infection and approaching baldness.

Grateful users of Sebacin Basic Formula write that a single treatment will often eliminate annoying symptoms. By keeping the scalp clear and free of germ infection, you give nature a chance to replace hair loss.

Absolutely Nothing Known to Medical Science Can Do More To Save Your Hair!

At last offered to YOU is a revolutionary formula series based on the most recent medical knowledge of hair and scalp problems.

It's great news for those who are impatiently waiting for a treatment to help eliminate dandruff and seborrhea, scalp itch, dry hair, and to stop the hair loss they cause.

Read the facts on this page, the medical testimony, the laboratory report on how Sebacin kills

the hair destroyers—the microbacillus, the pityrosporum ovale, the staphylococcus albus —*on contact!* Read what grateful users from all over the United States write about the Sebacin treatment.

Then study our guarantee. You are the only judge. Remember the Sebacin home treatment must accomplish for you what it has for all the others—or the full cost of the treatment—every nickel—will be returned to you.

Maybe you're among those who have tried every kind of hair preparation until now with no success. Maybe you are skeptical as to whether Sebacin is the preparation you have been waiting for.

Either way, don't delay! You have everything to gain—at no risk. We can state without reservation that NOTHING — ABSOLUTELY NOTHING KNOWN TO MEDICAL SCIENCE CAN DO MORE TO SAVE YOUR HAIR!

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Guarantee

The Sebacin formula series is warranted to be made of U.S.P. standard ingredients, compounded under rigid scientific conditions. The Sebacin treatment must result in marked improvement to your hair and scalp, or we guarantee full and immediate refund upon return of unused portion of treatment.

Sebacin Inc.

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☐ Enclosed find $10. (Cash, check, money order). Send postpaid.
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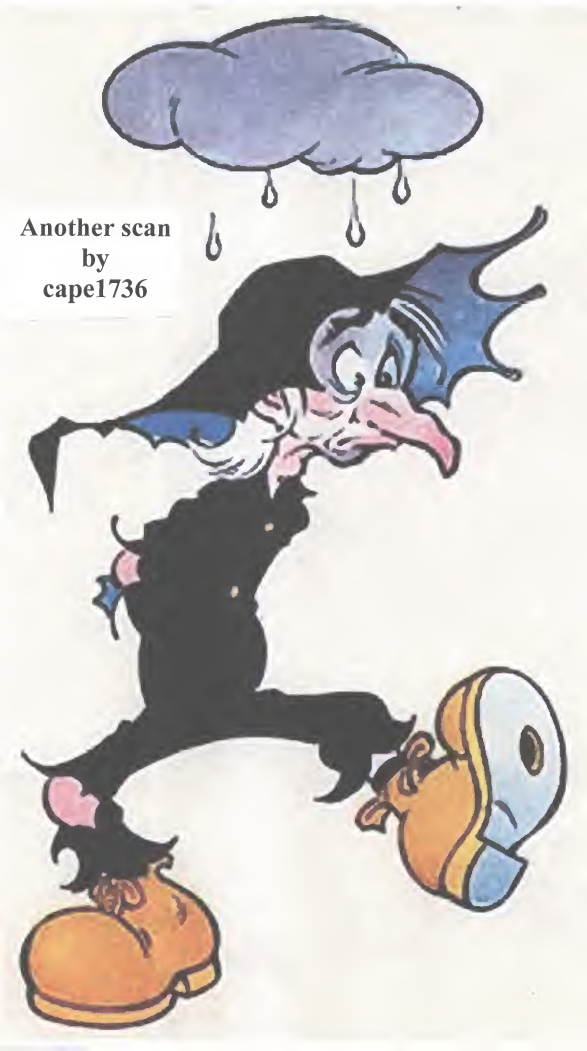
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